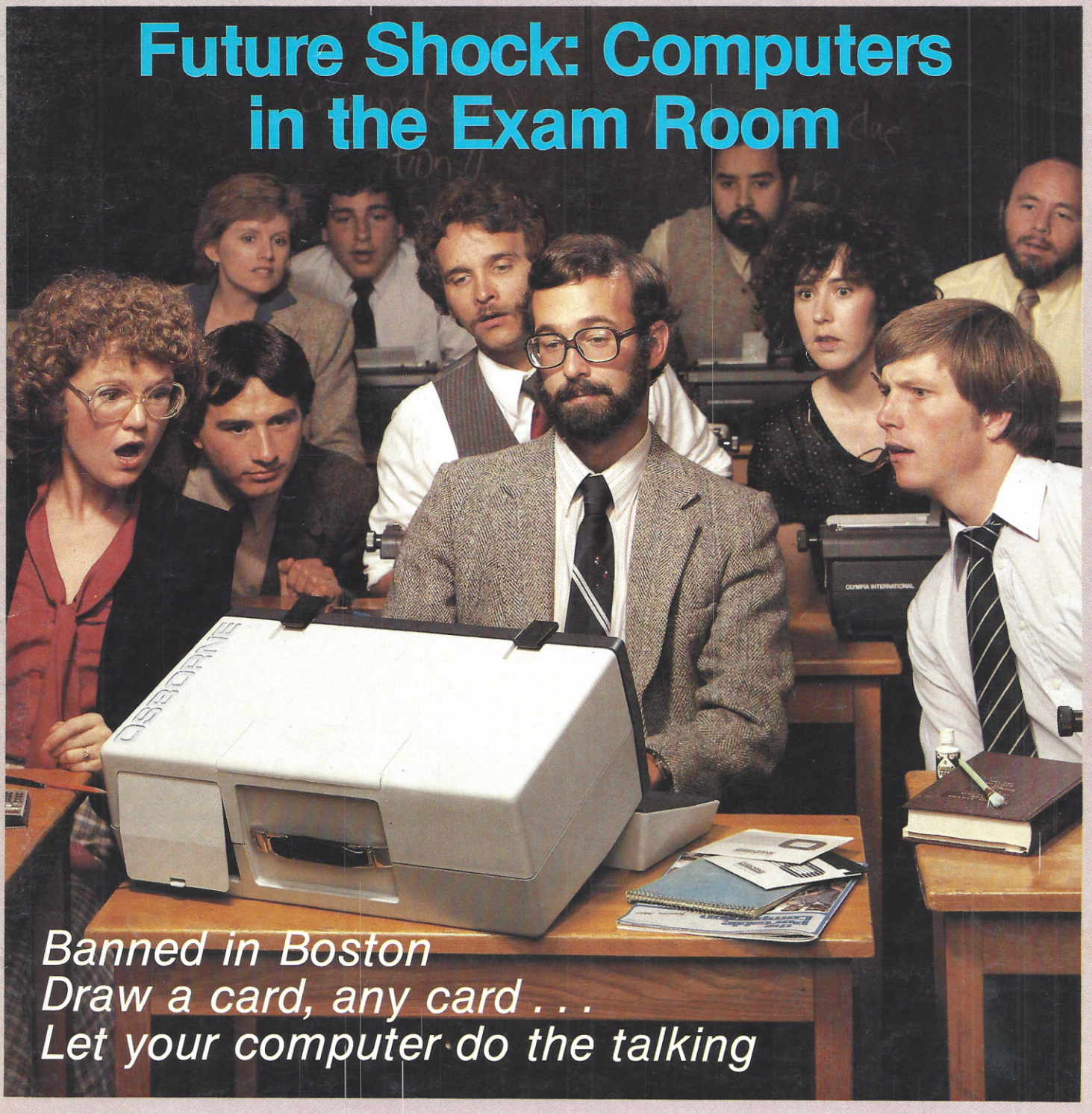
the Portable Companion™

August/September
$2.95



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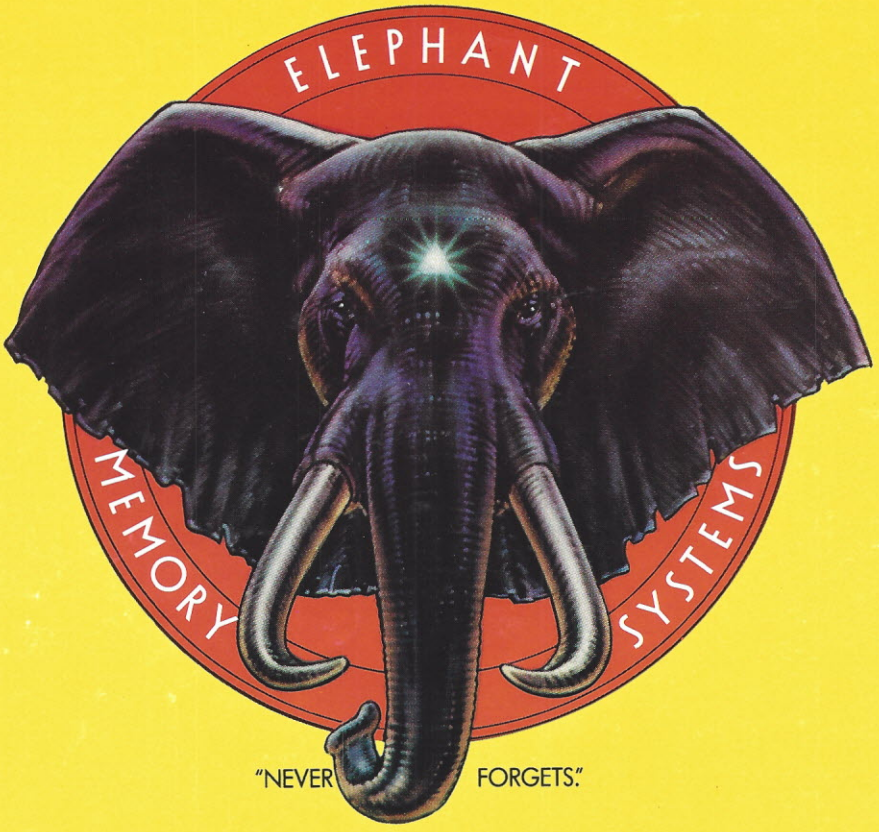

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Start Up

Publications are black holes.

By this I mean that they constantly gobble up articles and information. No matter how hard you try, it seems as if you can never get enough material for the next issue.

Nevertheless, we've managed to put together the requisite amount of material to print our second issue, and you should note that we've made some changes in an attempt to better organize our black hole.

One comment made about our first issue was that it had a wide range of material in it, with no attempt being made to separate the novice material from the advanced goodies. Osborne 1 owners tend to be a varied lot, and we are going to help as many of them as we can with this magazine.

So that you can figure out which articles are best for you we've implemented a rating system. Articles intended for the novice or advanced Osborne 1 owner will be identified as such in the Table of Contents. If you're a newcomer to computing, start by reading the articles identified as being appropriate to novices. You old-timers will want to read the articles marked as being advanced, and, of course, you'll want to skim the rest of the magazine for helpful tidbits you might not have known about.

In future issues we'll expand your horizons with articles on CP/M assembly language programming, more tips on how to connect printers to the Osborne, and software options you might not have considered when you purchased your machine. And remember, this is your magazine, so if there's a type of article you think is missing and would be useful to you, be sure to let us know.

As we continue to expand and organize *The Portable Companion* in the future, we'll be doing more to make our black hole more useful to you, no matter what your computer proficiency level.

Now, if you'll excuse me, I've got to get back to the pile of manuscripts on my desk; there isn't much time to chat when you're hanging around a black hole.

Thom Hogan
publisher

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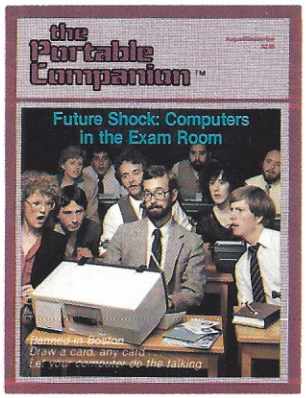

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The Portable Companion is published bimonthly by Osborne Computer Corporation as an aid in helping Osborne 1 owners understand and use their computer.

Send subscriptions, change of address forms, USPS Form 3579, and any other material to *The Portable Companion,* Osborne Computer Corporation, 26538 Danti Court Hayward, CA 94545. (ISSN 9732-7501). Subscriptions are $9.50 for six issues, and are not available for overseas or international residents.

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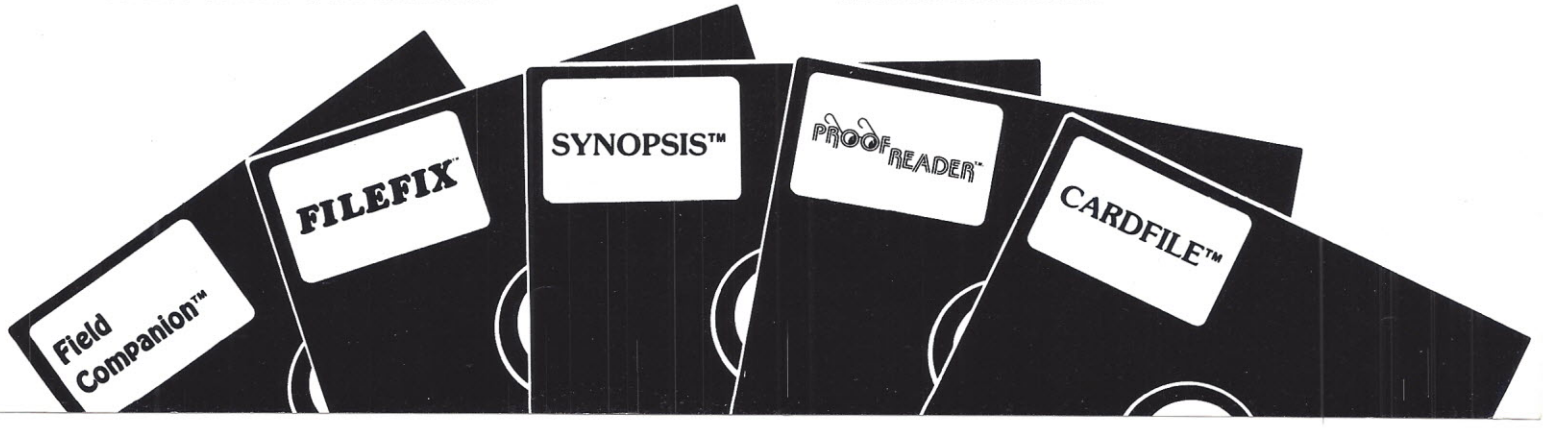
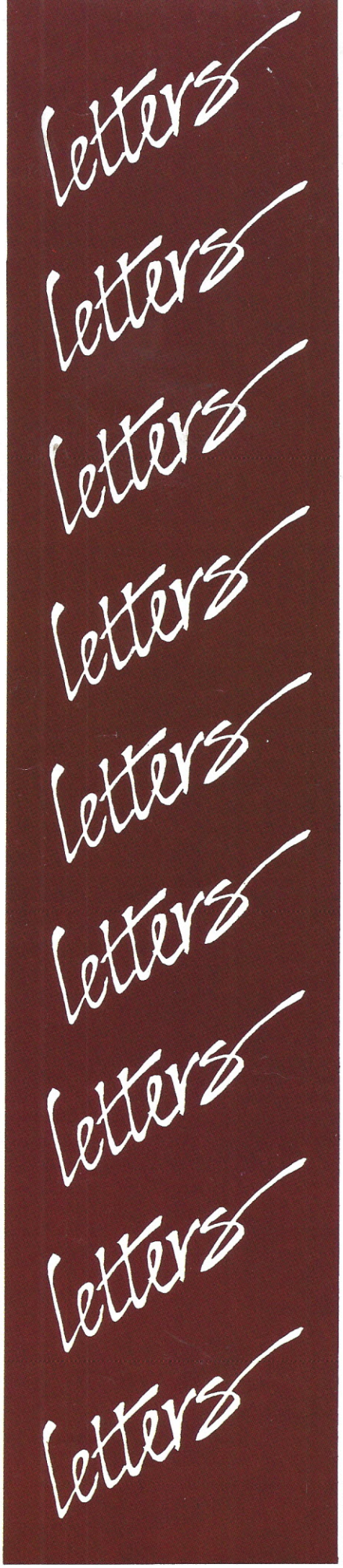




Neither Rain, Nor Sleep, Nor BDOS Error. . .

As we put this issue to bed, letters in response to the first issue have began pouring in, and we do mean pour. For the past few days we've been averaging several hundred a day, and this looks like just the beginning. We'd like to thank all of you who took the time to write and/or fill out the User Survey. We'll have your full reaction to the initial issues by the time the next one goes to press, but in the meantime we thought you might want to see a sampling of the comments we've been receiving:

Great Magazine! Congratulations!

Your first issue was great!

Thank God this magazine arrived!

Love the Osborne, hate the manual.

Great magazine.

Love that Osborne; love that Portable Companion.

Your "smoother" program on page 45 has errors!

sure does, see Whoops, page 94-th

Please speed up 80-column and double density!

Who Needs 80 Columns?

Under the heading "Osborne Wants Your Opinion" you said that you were surprised that only 10% of Osborne owners would purchase the 80-column display, especially since you had been asked about it often.

Perhaps you have been asked about it by people who don't own an Osborne, or who have just bought an Osborne and have not really settled in with their new tool and learned what it does. Once upon a time I thought I needed 80 columns. But, after some brief experience, on reflection I see the desire for 80 columns of display as somewhat naive.

Why 80 columns? Why not 79? Or 92? If you relate it to the standard size piece of paper, consider that the 8½ inch paper width comes to 85 columns if you type with Pica-sized type or 102 columns of Elite-sized type. On this size paper we normally type only 65 columns (in Pica) or sometimes 78 columns (Elite).

Once the realization hits that the format of a document on the screen is merely for our convenience, the number 80 loses its magic. With experience you come to trust your tools to do what you want them to do, and you find you don't need to see 80 columns in order to print 65 wide. This letter is being written at 52 wide and will be printed at 65 columns. I keep most of my text files at 50 or 52 columns for viewing convenience. It is a very simple matter to reformat for printing.

So mark me down as someone who won't buy an 80-column display merely for the pleasure of seeing an extra 15 columns of margin around my text. Unless, of course, the extra smidgeon of convenience comes at a very low cost. I would rather invest in more storage capacity, i.e. double density.

I think you'll find that most Os-

borne 1 owners come to feel this way as they get used to working with the equipment and gain just a little computer sophistication about information storage versus formatting of output. This is probably why you are getting such a low "intent to purchase" response on this item.

Richard Ezzard
Kensington, CA

Those of you who read my editorials when I was editor of InfoWorld already know how I feel about this subject—I wrote an editorial denouncing 80 columns as an arbitrary and unusable standard.

The number 80 comes from two places: the IBM punch card, which has 80 columns on it, and the fact that 80 happens to be a good number to use to make software and hardware simpler. Personally, I hope that computer manufacturers start looking at what computers are used for and design to those specifications instead of an arbitrary and outdated "standard."

Besides, the Osborne already allows anyone to run 80-column software, as is. There is some inconvenience in having to use horizontal scrolling, but the fact that more software doesn't work with other screen formats just goes to show how inflexible most software really is. If I were designing a machine, it would show 132 columns and 66 rows of information, which would allow me to show elite type on a standard page oriented either horizontally or vertically. —th

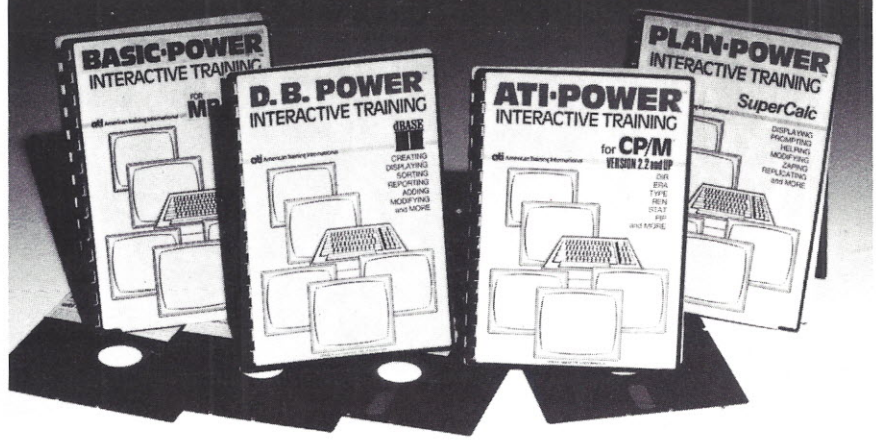
Needs Help With WordStar and Epson

You and the user's group have done a good job with the first issue of *The Portable Companion*. So good, I've sent for an application to join FOG, and have subscribed to the magazine, as well.

Having said that, I'd like to suggest that future application and modification articles be written assuming that many Osborne users are new to com-

Continued on page 90

ATI says they can make life easier . . . so why don't you listen?



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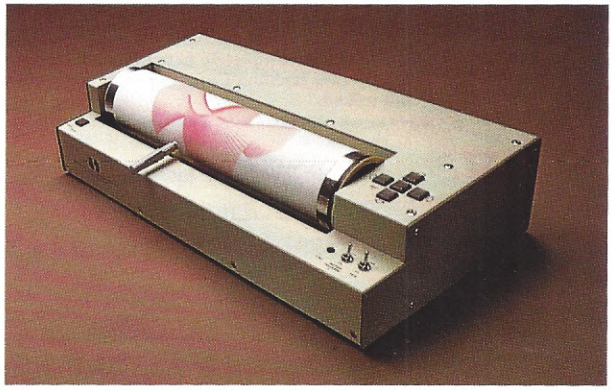

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The Need for Standardization

by Adam Osborne

Standards have always been a noble virtue within the microcomputer industry. Everyone supports the concept of a standard and will work for it - providing there is no price to pay. From time to time committees have been appointed to develop standards of every conceivable type, but their greatest achievement is to spend money and generate reports.

The ultimate microcomputer industry standard would result in products that were completely compatible, one with another. Suppose for example, you could swap diskettes from your Osborne 1 with a buddy who had an Apple, TRS-80 or some other product. Wouldn't that be just dandy? Of course it would, but then so would a world that was free of crime, poverty and war.

Fortunately, we can make much greater strides towards achieving microcomputer industry standards than we can towards achieving a world free of crime, poverty and war.

First, a little background.

The fact that there are so many different and incompatible microcomputers is a legacy of the minicomputer industry, which could be looked upon as the microcomputer industry's predecessor. Minicomputers were built beginning in the mid-60s and are still built today. Minicomputers cost a lot more than microcomputers; frequently they are three or four times as expensive without being any more powerful or capable. Such popular minicomputers as the Data General Nova, the DEC PDP 11, Computer Automation's Alpha 16, or General Automation's SPC-16, are in fact less capable than the 68000 microprocessor and quite comparable with the popular Z80 microprocessor (which is used in the Osborne 1).

So why do people continue paying three or four times as much money for a product that is at best equivalent and may even be inferior? The answer is that they are frequently locked in by unique programs. Years ago when there were no microcomputers mini manufacturers (or third parties providing software) generated programs to make the minicomputer perform some specific task. Customers rarely buy a computer, usually they buy a solution to a problem. And that means both a computer and a program. If the only available program happens to be one written long ago to run on a specific minicomputer, then, frequently, it is cheaper to buy the expensive minicomputer with the available program, rather than buying the less expensive microcomputer followed by the extra cost and uncertainty of generating a

from the Fountainhead

new program to perform the task you have in mind.

This is something I like to call "the software prop". Sales of minicomputers are today "propped up" only by the existing base of software generated in the past for their product. Few people would buy these minicomputers if they had the choice of getting a microcomputer with equivalent software.

The software prop was something minicomputer manufacturers were acutely aware of. In fact they built their minicomputers to be unique. They went out of their way to make sure that programs written for their minicomputer could run on nothing else in the world. Once a customer had bought their minicomputer, and written programs for it, they were locked into that machine forever. Or so the theory went.

But the microprocessor—which gave rise to microcomputers—changed all that. The microprocessor (for those of you who are not into such things) determines, at the most fundamental level, the way you write programs for a microcomputer. There are just a few microprocessors that are used by nearly all of the popular microcomputers on the market today. Two of them, the Z80 (used by the Osborne 1), and 6502 (used by the Apple II), between them probably account for 95% of all the microcomputers sold. At the most fundamental level of programming therefore, nearly all microcomputers are programmed using method A or method B. Minicomputers on the other hand, do not use microprocessors; instead, they use special electronics specifically built for the minicomputer. In consequence, the 50-plus minicomputers still on the market have 50-plus fundamentally different programming methods. This is in stark contrast to the two used by nearly all microcomputers.

The problem of making microcomputers compatible should therefore be quite simple, but for two reasons that is not the case:

1. Unfortunately, too many people simultaneously started building 5¼ inch floppy disk drives (the ones used by nearly all microcomputers). In consequence, there was no popular or standard format for writing information on the diskette surface. Thus, a diskette that is written by one brand of microcomputer usually cannot be read by another brand of microcomputer.

2. There is a set of programs referred to as an operating system, which ties together the components of a microcomputer system. Any program written to run on a particular microcomputer relies on the presence of this operating system to perform such routine tasks as transferring information between a diskette drive and memory, or interfacing the keyboard with the computer. A program written for a specific microcomputer using one operating system does not run on the same microcomputer using another operating system.

We can do a great deal to solve the first problem: that of incompatible diskette formats. On the double density Osborne 1 for example, we intend to make it possible for you to read and write using a variety of formats, not just the one we chose.

On the subject of operating systems, although there are dozens of them around, CP/M—the operating system used by the Osborne 1—has virtually become an industry standard, simply because so any people use it and so few people use any other. That quite honestly is the reason we chose CP/M, not because we thought it was the best, or even that we thought there was any merit to choosing the best. In the computer industry, one of my favorite sayings is that "adequacy is sufficient, everything else is irrelevant". CP/M is certainly adequate, everyone uses it and that is good enough for me.

If nearly everyone uses CP/M, and in fact it is possible to program a microcomputer so that it will read a wide variety of different floppy disk formats, then why is there so little compatibility between different brands of microcomputers?

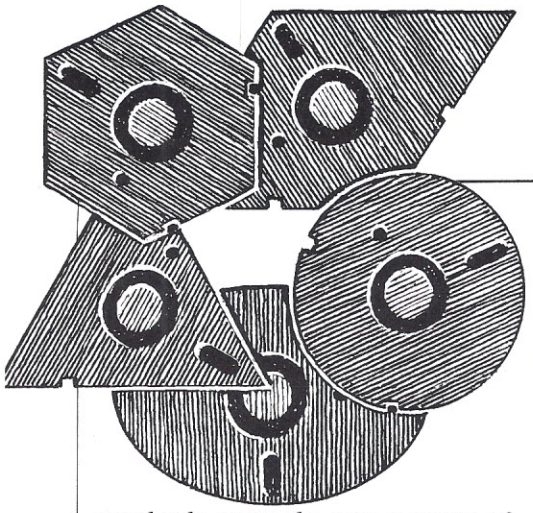
The answer is that too many manufacturers have been closed-minded about compatibility and incompatibility. They have gone out of their way to make their product as incompatible with everyone else as possible.

Take Apple, Commodore and Atari. They all use the same 6502 microprocessor, yet it is virtually impossible to make these products compatible with each other however hard you try. Apple, for example, uses one of the most off-the-wall diskette formats that anyone could dream up. From that point on they make everything unique unto themselves, and as incompatible with the rest of the microcomputer world as possible. This is the stated policy of Apple management. They believe in the end this is the right way to go and the only way to survive in the long-term.

Why?

The answer, if we are to believe the folks at Apple, is that in the end the Japanese or some other mass merchandiser is going to sweep the market with low cost machines anyway, so your only protection against them is to lock your customer base into something thoroughly unique and completely protected by patents. In other words, "hood wink" your customer base into paying more now, and in that way you can insure that they continue paying more in the future.

I do not now and have never believed in this strategy. On the contrary, I believe that the successful microcomputer manufacturers are those who conform as closely as possible to industry standards wherever they exist. That allows me to build and sell machines inexpensively, since I am not burdened by the very considerable expense of generating unique programs. I can in-



stead rely upon the vast amount of programming that is readily available, much of it quite inexpensively.

But that is just opinion. There are also facts to support my position.

Consider first of all the fact that when I first introduced the Osborne 1 in the summer of 1981, there was no IBM computer using CP/M, there was no Xerox computer using CP/M, rather CP/M relied on a few small companies that had survived from earlier days, lesser-known outfits such as NorthStar, Vector Graphic, Cromemco, Morrow, Godbout, and so on. Ranged against this collection, there was Radio Shack, which could have sued CP/M but didn't, and the trio of 6502 users—Apple, Commodore and Atari—who could not have used CP/M, since CP/M will only run on the 8080 or Z80 microprocessors.

Yet CP/M survived.

Why?

Because the non-CP/M world was a house divided, while the CP/M world was a house united. Even though Radio Shack did not encourage the use of CP/M, approximately a third of all TRS 80 users used CP/M anyway, since so many independent companies offered CP/M for the TRS 80. Take this third of TRS 80 users, add the many small companies using CP/M, and you came up with a group which, taken together, was equal to any one of the three 6502 giants, Apple, Commodore or Atari. Had these three companies been a house united, today CP/M would probably be unknown and the Osborne 1 would be using the 6502 microprocessor, rather than the Z80.

The first problem with attempting to be unique, therefore, is that you are setting yourself up on your own to take on all comers. That is a tough assignment.

The next fact tending to show that the quest for unique microcomputer products will fail is the large existing body of CP/M or industry standard programs, which taken together, exceed even the large body of programs written for the Apple. This is a fact that Apple has had to recognize. Microsoft began by building a special add-on card, which turns the Apple into a CP/M-compatible machine. Despite all of Apple management's attempts to make their product unique, the customer base had thwarted their intentions to the point where between one quarter and one third of all Apples in existence today are running CP/M-compatible programs. Even the Apple III now has a modification—offered by Apple itself—to turn it into a CP/M-compatible machine. Commodore, likewise, is introducing products that turn its computers into CP/M-compatible machines.

So much for the theory that "to survive you must build a microcomputer like none other on earth."

For economic reasons, I believe that there will be tremendous pressure placed on microcomputer manufacturers to conform with an industry standard, which is slowly emerging from the pull of the market rather than anyone's careful design. We, at Osborne Computer Corporation, will do our best to identify these industry standards as they appear and conform with them.

Adam Osborne, in addition to being one of the microcomputer industry's most prolific writers, finds time to oversee the continuing growth of Osborne Computer Corporation from his post as company president.

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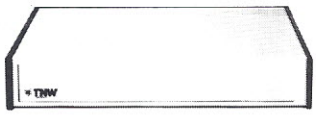

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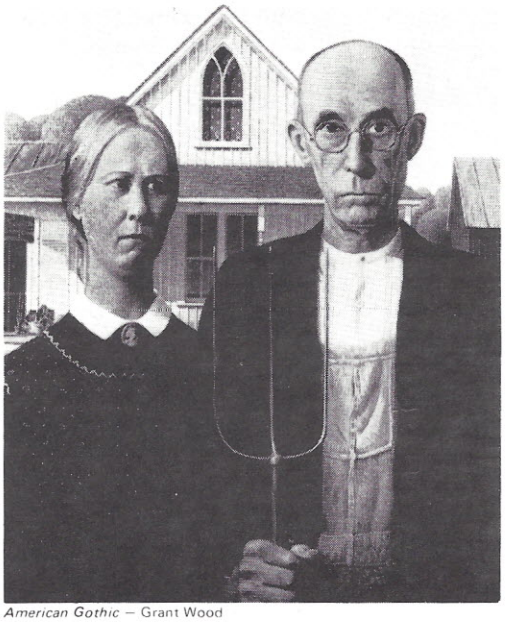

American Gothic – Grant Wood

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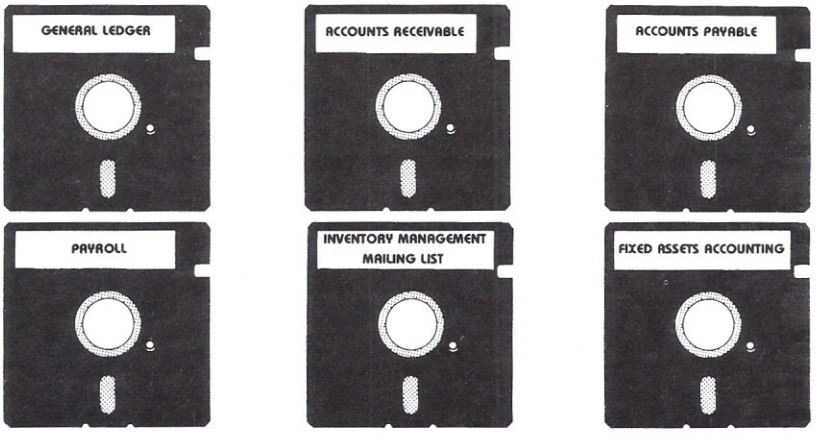

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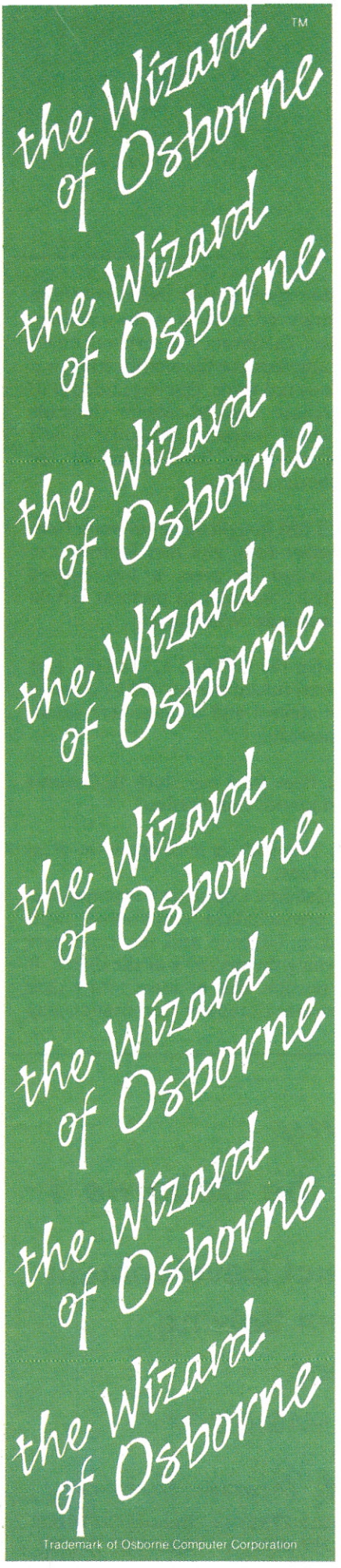

I See An Answer In Your Future. . .

by Thom Hogan

I believe there is no such thing as a stupid question. The object of asking a question is to find out the answer; if you knew the answer, you wouldn't have to ask the question.

On the other hand, there *is* such a thing as a stupid answer. It is the intention of this column to answer all questions, no matter how trivial they are or how obvious the answer might be, and to do so without ever creating a stupid answer. This column is your chance to ask anything you might need or want to know about the Osborne 1 and its software. Please make your questions short and to the point, and address them to:

The Wizard of Osborne—*The Portable Companion*
Osborne Computer Corporation
26538 Danti Court
Hayward, CA 94545

Due to the volume of questions that I receive, I cannot promise that I will individually answer every one. I'll try, of course, but remember there are over 30,000 of you and only one of me.

Q: All your new advertisements show a blue and grey case. Mine is brown and black. What gives?

A: Beginning in early May, 1982, we completed all domestic shipments of the brown/black Osborne 1 units we had been producing. We spent the month of May retooling our two production plants and beginning production of the blue and grey unit you refer to.

Let me set all your imagined fears aside: the functional components of both machines are exactly the same. We still call the unit the Osborne 1, it uses the same electronics, the same disk drives, the same monitor, the same power supply, and the same keyboard.

The differences between the pre-May and post-May Osborne 1's are all cosmetic. The new case is made using an injection mold process instead of vacuum-forming. This change was made in order to speed up production and help keep up with the enormous demand for our computer. While we were at it, we cleaned up the looks a little bit, changed the units to our corporate colors, and added a coiled cord keyboard cable. Also, we made the voltage switch more accessible to the user (see below).

We suspect that the old brown/black units are going to become collector's items. Original Apples, for instance, are selling for two- to three-times their original selling price.

Q: I'm traveling overseas, how can I change the internal voltage of the Osborne 1 from 115 volts to 230 volts?

the Wizard of Osborne

A: It is a simple modification on all Osbornes, although to do so on all brown/black Osborne 1's requires that you disassemble the unit. All of our dealers have been provided instructions on how to make the change, which involves moving a wire from one position on the power supply to another. On new Osbornes (blue and grey), a small card in the fuse section of the power switch well is used to make the switch. Directions on how to do so are provided with the new case computers and are also repeated in the technical manual.

By the way, since the Osborne 1 has its own internal monitor, it does not care whether 50 hertz or 60 hertz power is being used. In other words, the only change you have to make to the machine to use it in Europe is to convert the power supply to 230 volts.

Q: I need baud rates other than 300 and 1200. Can the Osborne be made to communicate at other rates?

A: Baud rates refer to the speed at which information is sent through the Osborne's serial communications port. A baud rate of 300 means that 300 bits are sent per second, or about 30 characters of information.

If you wish to switch to 600 or 2400 baud communication, the modification is simple—jumper J1 on the main logic board (location C4 for you veteran circuit board designers) should be removed. Then, when you use the SETUP program to specify the baud rate you will get exactly double the rate that you specify (specify 300 and you get 600, for example).

Most people who ask this question ask whether 9600 or 19.2K baud is possible on the Osborne. The answer here is not quite so clear. We'd prefer to say "no" and leave it at that, but we have seen users who have made modifications to their machine to implement such a change.

We caution you to consider the consequences of making changes to the electronics of your machine, which you'll have to make in order to change the baud rate, however.

First, it voids your warranty. Second, and more important, is that the parts with which the Osborne 1 is built are not guaranteed to work at speeds over 4800 baud. While it is entirely possible for the parts to work at faster speeds, they have not been guaranteed to do so by the manufacturer. Therefore, you very well might be able to make the modification, but it may not work. Our suggestion is to purchase the 80-column upgrade when it becomes available; it will feature faster baud rates for the Osborne serial port.

Q: I just bought some software from another firm, and they indicate I'm supposed to press a key labeled "DEL" in order to perform certain commands. Where is it?

A: On the Osborne 1, the DEL (for delete) function is entered by pressing the control and hyphen keys simultaneously.

Q: How do I buy stock in Osborne Computer Corporation?

A: You can't, at least not at the present time.

Osborne Computer Corporation is a privately-held corporation, with Adam Osborne and the employees owning the majority of the shares. It is possible that at some future date Osborne Computer Corporation may

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"go public" or sell the privately-held interests to a public firm, at which time you would be able to purchase stock.

Adam Osborne has publicly stated that he wished he could sell stock to Osborne 1 dealers and purchasers before selling to the general marketplace. Unfortunately, the Security Exchange Commission (SEC) does not allow such restricted sales.

Q: I have encountered an annoying problem in Microsoft BASIC: it fails to generate the graphics character for decimal 9 (an upper left corner for a box). Why do I get a horizontal tab instead of the graphics character I want?

A: I first saw this problem on a Vector Graphic System B computer. Apparently, Microsoft BASIC interprets the decimal 9 character as a tab, no matter what the context. To defeat this function and get the proper input, use this POKE command before trying to print the upper-left-hand-corner-of-a-box character:

POKE 16750, 195

To re-enable the normal tab function:

POKE 16750, 194

The **POKE** function in BASIC allows you to replace the contents of any single memory location with a new value. In this example, I change the value of 194 (decimal) stored at location 16750 to a 195 (also decimal).

Q: I bought a dBase II from a mail order firm. What I got wasn't identified as being Osborne Approved Software. Also, why did I receive an 8" diskette in addition to a 5¼" diskette with a typewritten label?

A: When Osborne Computer Corporation purchases the rights to distribute software under the Osborne Approved Software label, it usually does so by buying an exclusive distribution license. What this means is that Osborne Computer Corporation has the exclusive rights to duplicate diskettes in the Osborne 1 format. We edit the product's manual for consistency with our other manuals; we often make minor modifications to the program to be better suited to our computer; we package the program in our unique, high-quality binder or folder; and we train our support staff so that we will be able to handle dealer questions concerning the program. Osborne Approved Software is only sold by approved Osborne dealers, is not available via mail order, and is recognizable by its unique packaging. DBase II is an example of a program for which we purchased exclusive distribution rights in the Osborne format.

What most mail order firms do to sell a program like DBase II is to purchase 8-inch diskettes from the author (in this case, Ashton-Tate), then sell you that diskette. Because you can't use 8-inch diskettes in your Osborne, these companies also provide the service of "transferring" the programs and data to the Osborne format for you. You get both diskettes because this is the only way these firms can sell that software legally. Make sure when you purchase programs from such companies that they tell you of any "transfer charges" *before* you place an order. Whatever the original software creator provided in the way of documentation and packaging is what you get when you purchase programs in this manner. Also, be extremely careful in assuring that you get the current version of the program in question; from time to time we secretly sample what the mail order firms are selling. The last time we did so we received three different versions of the same program from three different mail order companies. Also, let us know if any company represents to you that the software they are selling is "exactly the same as what Osborne provides." We're not interested in stifling competition, but we're also seriously con-

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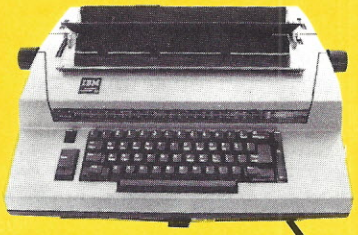
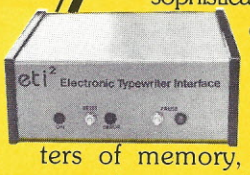


For only $500 the **Mediamix ETI²** lets you connect the IBM Electronic Typewriter Models 50,60, or 75 to **any** computer. Why invest in two separate machines? Your office typewriter can do both jobs, yielding better type quality, a consistent corporate image and renowned IBM service.



The **ETI²** is no simple black box, either. It is a sophisticated microcomputer with 2000 characters of memory, over 39 special commands and the option of doing typesetting on the IBM Model 50.

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the Wizard of Osborne

cerned about companies that misrepresent their product as ours.

A well-run mail order software firm that offers good support oftentimes offers good bargains, as well. The Osborne philosophy is always to provide the finest quality product and support we can for the software we sell under the Osborne Approved Software label.Osborne will not, and cannot, support purchasers of programs from other than authorized Osborne sources, however.

Q: I'm concerned about the way that Osborne keeps announcing new products, then procrastinates in delivering them. Why don't you simply announce products when they become available?

A: A good question, and a valid concern that we share.

I'm not going to make excuses for delays in delivering products, but I do want to make you aware of two things that are integral to the product announcement cycle.

First, Osborne Computer Corporation does not lie to its customers. Ever. Indeed, Adam Osborne, if anything, errs on the opposite end of the spectrum—he often goes out of his way to be open and honest about what Osborne Computer Corporation is doing and what it is working on.

For instance: immediately after the introduction of the Osborne 1, users began asking us if we were going to offer an option to show 80 characters and an option to expand the disk capacity. We could have simply said, "no comment," and been done with it. Instead, we told the truth—we *did* plan to offer such options, and had begun preliminary work on them. Unfortunately, many users interpreted our intentions as a product announcement and have therefore had it in their minds—in error—that Osborne announced products and didn't deliver.

Another problem we've experienced is that it is not always easy to anticipate an introduction perfectly. Many of the computer magazines in which we advertise and which carry new product announcements ask for three to four months lead time. In other words, that magazine labeled September you just received was actually put together in May. If we have a product to introduce in September, we can either anticipate it and give magazines the information in May, or we can wait until September. If we release a September product announcement in May, we stand the chance of not actually having the product ready when it is announced; if we release a September product announcement in September, you find out about the product January of the next year! Now that we have our own magazine and have control over when material is due, the situation should improve substantially.

My thanks to Brad Baldwin and Jackie Rae in preparing this column.

Thom Hogan has been, and continues to be, a Jack of Many Trades around Osborne. He has helped start and manage the documentation, system software, Approved Software, and magazine departments. Currently, Thom can be found in the research labs working on new product development.

Please address your questions to:
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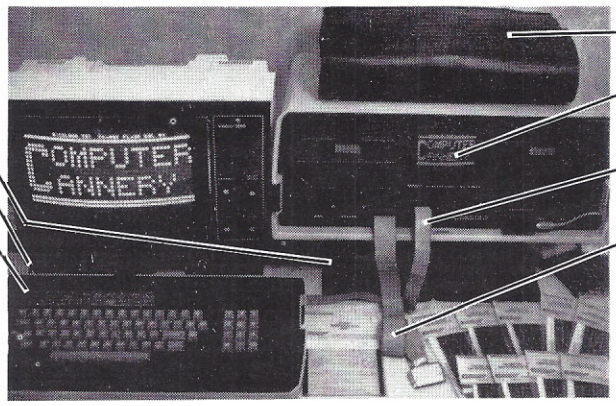

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now, if someone has an idea for the nose...

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Poetry and Eproms

Being a poet in lifestyle, a dreamer by preference, I soon employed my Osborne in the noble avocation of writing verse. After all, who could be more deliberate or capricious in the choice of a word, the syntax of a phrase, or the articulation of an idea, than a poet. An inflection here, an idiom there, and constant rearrangement everywhere proved ideal applications for the Osborne's processing power. Moreover, extending far beyond convenience, the machine's portability can be positively liberating. After all, there is something uncanny about facing a computer in the woods or on a lake, drives whirring in the breeze and insisting on order.

But I have discovered that this interaction with the Osborne goes much deeper than practicality. With each session, I come to grips with the dominant social metaphor of the 20th century-man's union/confrontation with technology. For me, the switch from creative, freely flowing thought to systematic, postured communication with a computer provides a thoroughly stimulating mental exercise. Regarding the function of the Osborne, to those who would assert "efficiency of business," I would answer "the busir

For what else m
can't love and
An idle thought
waving branch
but a life well
a life teeming
and lust,
To give and to tak
to tear and to sur
what more to unde
a life knit with expe
to experience the rea
Why not each breath an
each new feel, odor, a
a sensation.

—Fred Pursell,
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Where'd This FOG Come From?

When we began designing and putting together the first issue of *The Portable Companion,* we decided that we needed some balancing input—material not provided by or subject to Osborne Computer Corporation's editorial policies.

The decision was made to offer First Osborne Group FOG the opportunity to have an unedited section of editorial content within the magazine.

The members of FOG have indicated that they want this users' group section to be truly representative of all users' groups, not just FOG. Other groups that wish to contribute to this section of the magazine should address their correspondence and material to:

User Group Liaison
The Portable Companion
c/o Frank Morton
PO Box 11683-A
Palo Alto, CA 94306

Thom Hogan

Using MODEM7 to Transfer Data

by John Gaudio

Using a program called MODEM7, I have sent this article, and several others, by phone to my friends "IN THE FOG". I also use MODEM7 to send and receive pieces of "DOG BYTES", (the newsletter of the Denver Osborne Group, DOG) and to share .COM files, mailing lists, and any other CP/M files with my fellow Osborne 1 users.

MODEM7 is in the FOG library on FOG Disk No. 1. It has many uses, one of which is the performance of simple file transfers. In this article we'll look at one method of performing these transfers. With a little practice and experimentation, you'll find many more uses for this program.

Start with two Osborne 1s, copies of MDM7OS.COM, MODEM.DDC, and MODEM7.DOC from FOG Disk No. 1, and an Osborne-to-modem cable . I suggest starting with two Osbornes in the same room, and connecting their SERIAL RS232 ports together with the Osborne-to-modem cable. This allows you to see what's happening on each machine, and what you learn here will make transfers by phone (when you can't see the other machine, or talk to its operator) much easier to understand. Also read the MODEM7.DOC, and MODEM.DDC files. They're a bit cryptic to the novice, but you'll pick up some good points. After you've used MODEM7 a few times, read the .DOC files again. The experience you've gained will make them much clearer.

Now take two formatted disks, complete with CP/M on the system tracks, put MODEM7.DOC on one disk, MODEM.DOC on the other, and MDM7OS.COM on each. Make sure there's plenty of room, and that they are NOT write protected. Now you're ready to go. Put these disks into the left drives of the machines, then press the reset buttons and hit the return keys to boot the systems.
When you get the A> prompt, type

MDM7OS <CR>

on each Osborne. The program will

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C-1, install
erate letter
ely. Going
(Word) Star
on't want to
pewriter at
ill do what
ace print.

'49.00. The
users who
).00 we will
formation.

ask you for a command, and at this point the user with MODEM.DOC on the disk will type

S MODEM.DOC

to tell the system that it will Send a file named MODEM.DOC. The other user will type

R MODEM.DOC

telling the other system that it will Receive a file named MODEM.DOC.

In the real world, this is where you and your buddy would place the phones in the acoustic couplers of your modems, or hit the buttons, or send the strings of commands that activate whatever modems you'll be using. But for now we don't have to be concerned with all that. Just press the return key on each machine, and let your Osbornes do the work.

The machine sending the files will inform you that the file is open, that its extent length is 37H, and that it is awaiting something called the "INITIAL NAK". Don't be concerned about all this. Your Osborne (the sender is just telling you how big the file is, (37H sectors), and that it's waiting for a message ("NAK") from the other system, (the receiver) saying that the receiver is ready to receive a file. Once NAK is received by the sender, the sending machine will inform you that it is going to "SEND #01". It then sends #02, #03, #04, etc., until it gets up to #37H. Don't worry if the count seems a bit odd, it's in something called hexadecimal, or HEX. We can write an article on HEX later.

Meanwhile, on the receiving machine you'll see "AWAITING #01", "TIMEOUT", and then a sequence of "AWAITING #1", "AWAITING #02", etc., until, while "AWAITING #38," the receiver gets the word that the waiting is over. The last sector of the file has been sent and received, and all is well with the world! Now both machines inform you that "ALL TRANSFERS COMPLETED". If you followed all my instructions you'll find that the transfer took a little over 4 minutes. Now type

CPM <CR>

on the receiving machine, and use DIR to confirm that MODEM.DOC has in fact been transferred.

You can use this technique with any files, on drive A, or B, simply by adding the A: or B: prefix. Try a transfer the other way now, sending MODEM7.DOC back to the computer that was doing the sending last time. Since MODEM7.DOC is about twice the size of MODEM.DOC, this transfer will take almost nine minutes. If you're feeling really adventurous, pull the RS232 plug for a few seconds during the transfer, then replace it. You'll notice a few mild complaints on each system, but the errors will be detected, and the bad sector will be sent again. That's right, the system is constantly checking for errors, and retransmitting when it finds them.

Of course in the real world the Osbornes aren't likely to be in the same room. Each will need a modem, an Osborne-to-modem cable, and a phone. Remember to set one modem to Originate mode, and the other to Answer mode. It really doesn't matter which is which. Also set each modem to FULL DUPLEX. For details on these settings, consult the manual that came with your modem. Then use the Osborne-to-modem cable to connect the Osborne's RS232 port to your modem. If you are among the lucky few to have modems that can talk at

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1200 baud, look more closely at the .DOC files mentioned above, and see how to change the baud rate with MODEM7. This will cut your transfer time by seventy-five percent.

MODEM7 is also great for moving software from other CP/M systems to your Osborne. Many systems have a version of MODEM7 (or even MODEM4) running on them. and this makes it possible to transfer files that are on diskettes that won't work on your Osborne 1 (like 8 inch floppies, or some hard disks).

I've tried to show just enough to get you started with MODEM7, so please take some time to go over those .DOC files, learn more, and enjoy!

Diskette Library Listing

Here is a list of the diskettes currently in the FOG disk library. Most of these were downloaded from the INFO-NET disk Library. More diskettes are being added every month.

Disk No. **Contents**

001 MODEM-7 configured for the Osborne 1. A terminal emulation program with the capability to spool data to and from diskette and transmit CP/M files... Modified for the O1 by Byron McKay.

002 Personal Financial Package—for keeping track of your income and outgo at home. From Byron McKay (still needs work!).

003 Catalog of the CP/M and INFONET Library. Also a program to help you maintain a catalog of your disks.

004 Games—Adventure, Eliza, Bacarat. Also depreciation, amortization and benchmark programs.

Turn Your Osborne into an Electronic Filing Cabinet

by Bill Essex

Several months ago I was happy to discover that the editors of *Byte* magazine had seen fit to devote their November 1981 issue to Data Base Management Systems (DBMS's). Such system have been the stuff my dreams were made of—well, some of my dreams, anyway. Anyone with the smarts to purchase a microcomputer can now have the capability of storing and retrieving large amounts of data. A few years ago such large stores of information were consigned to science fiction (witness those TV reruns of "The Twilight Zone" and "Outer Limits") and, until recently, only governments or large corporations could afford such massive amounts of information.

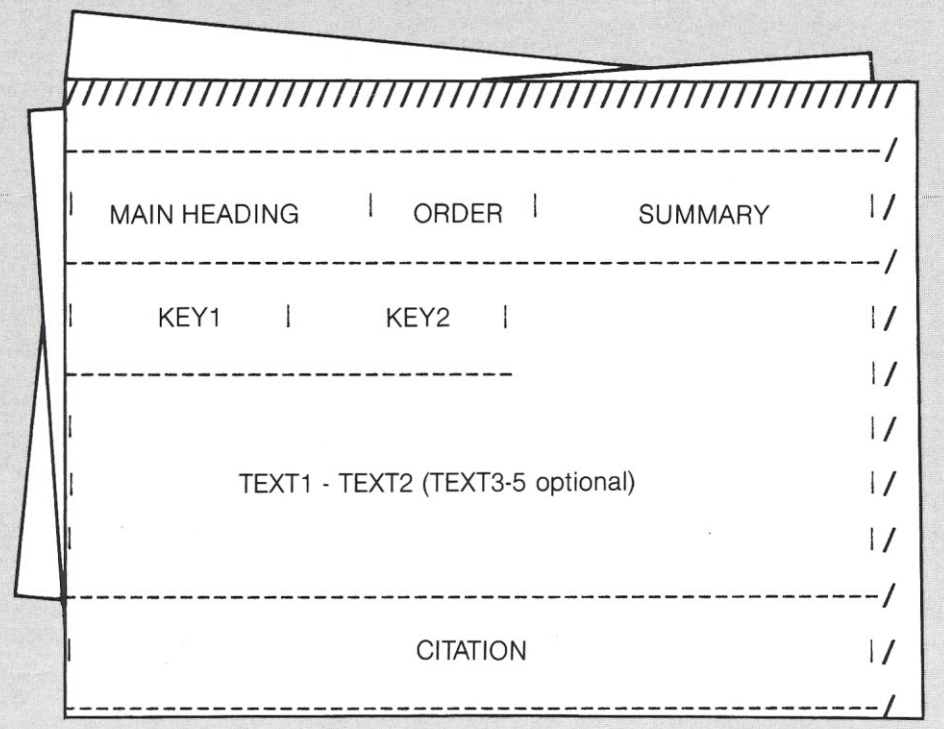
With the advent of the microcomputer all that has changed. And now there is the Osborne 1—move over world—DBMS's are now in the reach of anyone.

Now, admittedly there is a lot of software out there that enables you to create, compile, sort, search, and otherwise manipulate data. Much of it costs a great deal and is worth every penny. But after reading Edward Brent's article in the November 1981 *Byte* (p. 18 f.) I decided that it might be possible to use the MailMerge option of WordStar to emulate data base entry. The system I describe here is far from perfect and has little of the flexibility true DBMS's have. I designed it primarily as a stop gap measure to allow me to create data bases until I have a true DBMS. The program is DATABASE.FMT. When run through MailMerge it creates files which contain the notes I need to write reports. It is designed in such a manner that I am able to retain the note files and use with my (future,canned) DBMS when I decide on one that meets my needs and my pocketbook.

Brent makes note of how powerful word processing programs are (as we know) in composing, correcting, and printing text at the last stages of report writing. He goes on to make the point that during the note taking and research stages a good DBMS is most important. Brent then says: "All the functions performed by note cards can be carried out more efficiently by a DBMS. For each idea or quotation, you can create a record of the data base file that includes as its main text the quotation or a statement of the idea. Key fields can be identified for reference to the author, journal, page, and date. To help you organize the ideas later, you can use other key fields to include a brief phrase that summarizes the context of the record.

Each "note card" is designed to hold 7 fields. All fields except text fields use periods between each word of the field. The first is "MAIN HEADING" and includes a section or subsection heading and should be taken from the original outline that you've constructed for your report. "ORDER" is merely the numerical order of a particular note card assigned when the "note card" is typed. For "ORDER" use a letter and number up to 5 numbers. "SUMMARY" can be a single- to several-word brief description of the text contents. "KEY1" and "KEY2" are keywords selected from the text, describing content. Text lines 1-2 are always printed on "note cards." Text lines 3-5 are optional and are not printed unless text is entered on them. "CITATION" is a reference either citing a journal, book, magazine, or person responsible for information on text lines.

Figure 1: Format of an Electronic Notecard



In effect, what we are talking about is designing a program to write electronic note cards that are located in a note file—your electronic filing cabinet (see figure 1). Our program DATABASE.FMT is below. This version is commented to make it easier to understand. When you enter this program on a disk use WordStar's "editing no file" menu and select "d". You need not include the double dotted comment lines.

005 Startrek game, printer pictures, Epson printer test program, darkroom utilities.

006 Z-80 assembler and libraries

Disks 007 through 013 contain code and documentation for the Osborne Accounting Packages. These are public domain programs. Complete documentation and usage guides are available from Osborne/McGraw-Hill NOTE! Not yet configured for Osborne 1!

007-009 Documentation & Miscellaneous programs

010 Accounts Receivable

011 General Ledger

012-013 Accounts Payable

014 WordStar modification document by Thom Hogan. From FOG meeting on 12/17/81 . . . VERY Helpful!

015 Games—Castle, CIA, Quest (all Adventure-like), Starlane, Yahtzee. Submitted by Mike Mehr.

016 Utility programs—Display, Show, Compare, etc. Submitted by Byron McKay & INFONET.

017 Osborne1 and WordStar demos, Sieve of Erastosthenes, Sunrise

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program from July '81 Byte. The sunrise program contains an algorithm for a long-term sun almanac.

018 Chess, Password, CL2, Resize, Journal (for keeping track of expenses), Database program for MailMerge.

019 DSPACE, FIGHTER (screen graphics!), GRANPRIX, CIVIL WAR, LIFE (more screen graphics!), MONOPLY.

020 POW, DATABASE (by Tarbell), INVENTORY

021 Ham Radio programs - CODE, RTTY, MOONLOC (with long-term almanac for the moon).

022 Pacman-type game configured for the Osborne. Somewhat difficult to play because the maze extends beyond the edges of the screen. Scientific programs submitted by Ralph Johnson for curve fitting, simultaneous equation solution, and standard deviation calculation—a must for engineers!

023 Improvements to the Osborne General Ledger package by J.A. Woolley. These programs should now work on the O-1.

024 A great label-making program for your diskettes, using CBASIC, an Epson printer, and Avery labels. This will label your diskettes and help you maintain a catalog of what's on them. It also makes your library look more professional than hand-scribbled labels. A boon to your befuddled diskette librarian.

A backup copy of the FOG disk library will soon be available at the Digital Deli for those of you living in the South Bay. Disks will be available at both the Santa Clara and San Francisco meetings.

CPMUG disks (from which are copied many of the programs in the FOG library) are available on Mel Cruts' RIBBS bulletin board. To use it, dial (415) 263-2558, let ring once, then call back. 7:00 - 10:30 p.m. daily.

Figure 2: Commented Version of DATABASE.FMT.

```
..This is the commented version of DATABASE.FMT
..a screen-oriented DATA ENTRY FILE for databases.
..This system creates a file of "electronic notecards"
..and is set up to prompt you from the SCREEN.
..Follow the steps below:
..(1) logged disk drive must be Drive B.
..(2) enter merge-print from "editing no file" menu
..(3) answer merge-print questions as follows:
..(4) NAME OF FILE TO MERGE-PRINT? -DATABASE.FMT<cr>
..(5) DISK FILE OUTPUT? Y<cr>
..(6) OUTPUT FILE NAME? (enter name and use .NTS file type)
..(7) START AT PAGE NUMBER?  <cr> for beginning
..(8) STOP AFTER PAGE NUMBER? <cr> for end
..(9) NUMBER OF COPIES?  <cr> for one
..(10) USE FORM FEEDS? <cr> for No
..(11) SUPPRESS PAGE FORMATTING? <cr> for No
..(12) Now you are set to begin entering your data into the
..      note file you have specified.
..(13) To stop the data entry process just press <cr>, next
..      enter a capital P and you will be asked if you want
..      to abandon, resume, or hold printing to the .NTS file
..      you have created in Drive B.
..(14) WordStar sometimes hangs up when you try to exit
..      DATABASE.FMT.  Be persistant.  Keep pressing the
..      <cr>, uppercase P, and uppercase Y.  You will finally
..      exit to either the PRINT or DELETE option of the
..      "editing no file" menu.  Now all you have to do
..      is to key in Control-U and the ESCAPE key and you'll
..      be out of the data entry program with your note file
..      intact.
.RM 65
.OP
.CS
.DM** You are now creating a series of electronic notecards.
.DM
.DM ****** DATA ENTRY INTO DATA BASE ******
.DM ******   SET "CAPS LOCK" TO ON   ******
.DM Enter symbol and data called for below:
.DM
.DM----------------------------------------*
.AV "Main heading", MAIN HEADING, 25
.DM--------------------------*
.AV "Order", ORDER, 6
.DM-------------------------------------------*
.AV "Summary", SUMMARY, 30
.DM-----------------------------------*
.AV "Key1", KEY1, 25
.DM-----------------------------------*
.AV "Key2", KEY2, 25
.DM          !----!----!----!----!----!----!----!----!----!----!----!----*

.AV "Text1", TEXT1, 60
.DM          !----!----!----!----!----!----!----!----!----!----!----!----*
.AV "Text2=___'", TEXT2, 60
.DM          !----!----!----!----!----!----!----!----!----!----!----!----*
.AV "Text3=___'", TEXT3, 60
.DM          !----!----!----!----!----!----!----!----!----!----!----!----*
.AV "Text4=___'", TEXT4, 60
.DM          !----!----!----!----!----!----!----!----!----!----!----!----*
.AV "Text5=___'", TEXT5, 60
.AV "Citation", CITATION, 60
+&MAIN HEADING&          *&ORDER&
:&SUMMARY&
<&KEY1&    >&KEY2&
'&TEXT1&
&TEXT2&
&TEXT3/O&
&TEXT4/O&
&TEXT5/O&
**&CITATION&
.RP
.FI DATABASE.FMT
..end of DATABASE.FMT
```

When this program is run you are prompted from the screen and your answers are written on consecutive "note cards". Figure 2 is examples of notes written through the use of DATABSE.FMT to help me write this article.

Figure 2 - 2 entries in "*.NTS" file—entered by running DATABASE.FMT

```
:SORTING.WITHOUT.DBMS'
<SORT.DATA              >^QF
'SORTING WITHOUT A DBMS ON MY OSBORNE INVOLVED USING
THE ^QF COMMAND OF WORDSTAR -- SUGGESTED BY DR. PETER
FLEMING, FELLOW MEMBER OF FOG.'
**BILL ESSEX

+FOG.DATA.BASE.ARTICLE          *C6
:SORTING.WITH.DBMS'
<SORT.DATA              >DBMS
'A DBMS ALLOWS YOU TO SORT DATA IN ADDITION TO CREATING YOUR
DATA BASE.'
**BRENT, BYTE - NOV'81, P 28


+FOG.DATA.BASE.ARTICLE                  *C7
```

OK, now we have our series of note cards, but what now—how do we sort these note cards? By chance, Dr. Peter Fleming (a fellow FOG member) suggested a solution to me at the December '81 FOG meeting. Dr. Fleming brought to my attention the Find, Search, and Block Write commands of WordStar. He told me that he takes notes during the work day and places them in a WordStar file. At the day's end, he uses the find command <^QF> (see Sec. 8.07—WS User's Guide) to search through his notes. This enables him to reference particular points in his notes. He then places markers around the data he needs. After marking the block of information, a block move is used to move that information to another file, thus further ordering his original data.

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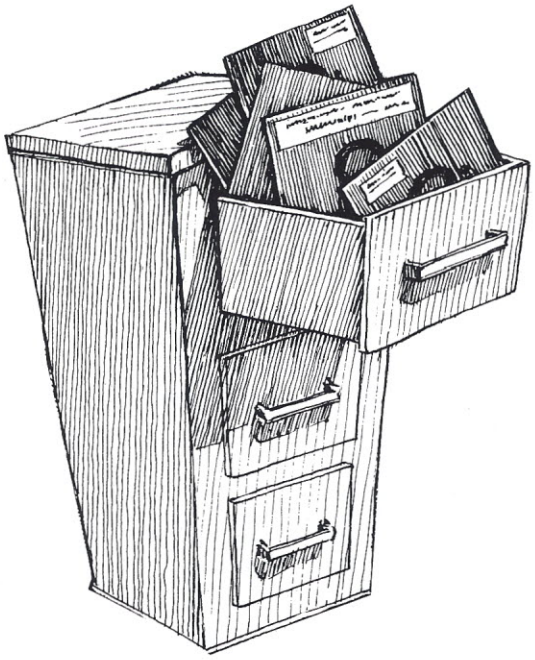

When I wrote DATABASE.FMT I generally followed Brent's suggestion on p. 28 of his article. To make the WS searches using the find QF command more precise I assigned different symbols to the different portions or the "note card". MAIN HEADING uses a " + ", ORDER A "*", SUMMARY A ":", and so on. When entries are made for each field of the "note card" the program automatically includes these symbols. Searches become more precise because with use of the <^QF> command the cursor will stop on every occurrence of the string you are searching for. Using the symbol in your search stops the cursor on a particular string. With the <^QF> command I'd find my keyword "sort data" in the text as well as in the keyword section. However I want to find it only as a keyword. Keywords use the symbol " " or " ". Placing a period between words in any of the "note card" fields other than text fields helps to sort out identical strings from text entries. Now, if I run the <^QF> search for "< sort.data, the "<" and the "." between words selects only the keyword entry I am looking for.

After a search is successful, block mark the "note card" and write it to a file, one "note card" to a file. The next move is to join these files together or just print them out in whatever appropriate order. Then get set to write your report.

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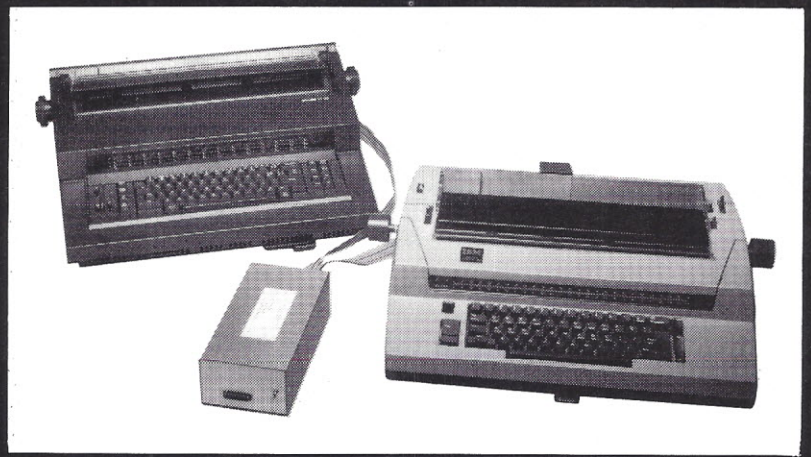

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Stripping WordStar Document Files

In the March FOGHORN a question was asked about stripping special characters from WordStar document files. Stripping files of these special characters is also applicable if you've ever tried to use the CP/M command TYPE on a file created using WordStar in the Document mode (Byron McKay is notorious for submitting library disks having .DOC files which you can't read using TYPE).

Normal ASCII code is 7 bits of information with the most significant or 8th bit (the parity bit) equal to zero (known as even parity). WordStar uses the parity bit and non-printing ASCII characters (hex 00 thru 1F) to represent its own internal control commands (e.g., printer control, soft hyphen, end of word, etc.) Therefore, WordStar control commands are generally distinguished by the parity bit being set to one (known as odd parity).

It is easy to strip the parity bit and set each character to even parity by using the **Z** parameter of PIP. Use the following to send a file created with WordStar in the Document mode:

- To a printer:
  PIP LST: = filename.typ[Z]
- To the console:
  PIP CON: = filename.typ[Z]
- To another file:
  PIP otherfil.typ = filename.typ[Z]

Since WordStar uses non-printing ASCII characters for printer control commands such as S (underscore), these commands do not appear in the resulting output from the first two examples, above. They do remain in the file created from the third example, however. Printer commands can be interpreted by comparison with their hexadecimal or CHR$(decimal) equivalent, where A = hex01 = CHR$(26). WordStar "dot" commands will not be altered by the stripping process and will appear in resulting file from all three examples given.

General Ledger Update

In the February FOGHORN, I described modification of the Osborne/McGraw-Hill General Ledger (G/L system adapting it to the Osborne 1 computer. Since my original submit-

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tal to the FOG library (implemented as disk numbers 23), I installed some improvements. These are outlined below:

1. A PRINTER.CONTROL$ string was added in CURSOR.BAS to automatically send the Epson condensed mode control character at the beginning of each report. This is useful since most reports are formatted for 120 columns. For other printers, the printer control string may be altered accordingly.
2. Cosmetic improvements were made to the Direct Posting and Cash Journal screen entry programs.
3. A reminder to turn on the printer was added to the Update program. Since the program gener-

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Saving Lost WordStar Text Data

by Mike Mehr

This program arose out of a need of mine to save documents being edited using WordStar that were nearly lost when the program "bombed out" due to power line brownouts. What I present here is a procedure to recover almost all of the text that is in memory at the time of a power glitch. If your document is too large for memory, this procedure can save the part that's there (that you haven't backed up yet with a ^KS), which is the only part not on the disk; you can merge it back in using WordStar later. I assume that when the Osborne 1 is reset, the restart program does not erase all of the memory (especially the area WordStar uses to hold your program). In fact, such programs usually execute in a small section of memory down around address 100, and your document is usually stored above address 7000 hexadecimal or so, so there is no problem recovering your text. No guarantees, but on your Osborne this is very useful for small— to medium-sized articles and programs; it's saved my skin more than once.

In its current form, the procedure for recovering files relies on you to type instructions using DDT to find where the document is located and its length. The program can be placed at any address <ADR> that is not where the document is or where the text will be after transfer. After running it, you press ^C and use SAVE to place the memory contents into a disk file. Finally, you run WordStar on the document file and merge in the saved image using ^KR, then delete the excess marker characters and otherwise clean up the resulting text file. You may have to retype the first paragraph or so, depending on what you were doing when the program bombed, but this is still better than having to retype the entire file.

First, the program. It's an 8080 assembler mnemonics so you can use DDT's **A** command to type it in. Eventually I hope to get an interactive version in the club library, but for now, it's up to you.

Note: <ADR> is the address to start the program.
<DDR>, starting address of the document (bytes)
<LEN>, the length of the document (bytes)
Replace these with hex numbers.

```
                    ;THIS IS <ADR> :
LXI H, <DDR>        ;THIS IS WHERE YOU FOUND IT
LXI D,100           ;THIS IS THE DESTINATION
LXI B, <LEN>        ;BC = LENGTH OF DOCUMENT
                    ;THIS IS  ADR  +9
MOV A,M             ;GET A BYTE FROM ORIG.PLACE
INX H               ;INCREMENT ORIGIN ADDRESS
XCHG                ;SWAP ADDRESSES
MOV M,A             ;STORE AT DESTINATION
INX H               ;INCREMENT DESTINATION ADDRESS
XCHG                ;SWAP ADDRESSES
DCX B               ;DECREMENT COUNTER
MOV A,B             ;TEST FOR ZERO COUNT
ORA C
JNZ <ADR> +9        ;BACK FOR MORE IF ANY
MOV, A,E            ;GET LSBYTE OF DEST.ADRS.
XCHG                ;SWAP DEST.ADRES.INTO HL
```

```
MVI C,21          ;ASCII FOR "!" (OR OTHER CHR)
                  ;THIS IS <ADR> + 19 HEX
MOV M,C           ;STORE MARKER AT DEST.ADRS.
INX H             ;INCREMENT DEST.ADRES.
INR A             ;INCREMENT AND TEST LSB = 0
JNZ <ADR> + 19    ;BACK FOR MORE TILL FULL SECTOR
RET               ;END ADRS.FOR BREAKPOINT
```

Now, how to use the program. First, when WordStar is interrupted by a power glitch or "BDOS ERR" message, get back to the power-on/reset screen that says " . . . Press RETURN." Now, put the CP/M Utility diskette in drive A and the diskette with your document in drive B; press RETURN. When you see "A >", run DDT by typing **DDT** and pressing RETURN. This use the **D** command to find your document in memory. It will probably be around address 7000 hex. Use this as DDR above. Now find the end of the part you want to save in memory. Subtract <DDR> and add 1; this is <LEN> in hexadecimal. Now pick a place for the program, say address 6000. This is <ADR> . Use the **A** command to type in the program. Then use the **G** command to run it with a breakpoint at <ADR> + 1F hex. Use the **X** command to display the registers. Take the number in the H register minus one and convert it to decimal. This is <SIZ> , the number of sectors to save on disk. Exit DDT with a C and run the CP/M command **SAVE <SIZ> FFF.XXX**, where "FFF.XXX" is the name of the file you want to save the document (whole or part) in. If "FFF" is your entire document file, you can pick right up where you left off with WordStar. If it's only part of the document, load WordStar and use it to insert "FFF" in the right place (with ^KR). Either way, you'll have to delete the extra marker characters inserted by the program to prevent your file from being filled with garbage at the end.

The following is a typical sequence after the reset of the computer:

```
<swap diskettes here: Utility in A, document in B>
<press RETURN; system restarts>
A>ddt
-d7000,7200
< numbers and ASCII codes listed here>
< suppose doc.starts at 712A and ends at 7784>
< thus < DDR > = 712A and < LEN > = 7784-712A + 1 = 659>
-a6000
 <type in the program (no comments); <ADR> = 6000
-g6000,601f
*601F
-x
C0Z1M0E0I1 A=00 B=0021 D=7785 H=0800 S . . .

-^C
A>b;
B>save 7 file.txt
 <swap diskette here: Wordstar in B, doc.in A>
B > C
B>ws
 <etc., etc.>
```

Good luck! This is assembly language programmiest at its kludgiest! Have fun!

ated a report without any notice to the operator, it the printer was OFF, the system hangs up.

4. At any entry prompt the Escape key now toggles the 52 character screen window to move right or left over the 64 character display. This greatly simplifies reading the display.

I hope to have this latest version eventually implemented in the FOG library. Meanwhile, I am aware of the difficulties some of you have had in obtaining a working G/L system. First there is the hassle of trying to get a copy of the library disk. Once you have a copy, it is necessary to compile all .BAS source programs and to initialize all .DAT data files; this step takes nearly an hour if you know what you're doing—longer if you don't. Then you

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Features Programs that will recover erased files, find & lockout bad sectors, as well as a disk editor that allows you to read or write directly to your disk. In addition an interactive submit utility, and three other utilities for compressing and expanding files that allows you to conserve disk space and modem time.

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must figure out where to get the G/L document.

For those who wish to avoid the hassle, I am willing to mail you two Verbatim Datalife single-sided, double density diskettes with my latest version of the Osborne/McGraw-Hill G/L system. These diskettes contain all .BAS source files, all .INT compiled intermediate files, and all initialized .DAT data files. There also is an automatic startup file (AUTOST.COM) providing display of the Osborne "Big O" and automatic initialization of the G/L system upon cold start or RESET RETURN. It is only necessary for you to initialize the diskettes with a copy of your CP/M system (SYSGEN) and copies of your SUBMIT.COM (CP/M) and CRUN2.COM (CBASIC) programs.

In addition to the two diskettes, I will send detailed instructions for getting the system up and an order form for purchase of the G/L document directly from Osborne/McGraw-Hill. All I request for this service is a nominal handling fee of $25.00. If you need non-Epson printer control, departmentalization, customized reports, or interfacing to other programs, let me know. I can be reached by phone at (408) 377-4870 during the day or (408) 268-5790 in the evening.

BDOS Error - Bad Sector

If you ever get the above message, it helps to have Disk Doctor. But, if you are like me and have not yet invested in the SuperSoft product, don't throw away the offending diskette. Use PIP to salvage as many of the files as possible.

If you are unsure which file is bad, simply try to PIP all files to an empty, formatted disk. Put your CP/M diskette containing PIP.COM in drive A and the empty diskette in B. Initalize using C (Control-C). At the A prompt, enter PIP. When the * prompt is displayed remove the diskette from A and replace it with your problem diskette. Enter B: = *.*[V]. Or try PIPing each file in turn with B: = A:filename .typ[V]. At the least you will isolate the bad file and save the good ones.

If a BDOS error message occurs when you are doing a cold start (RESTART/RETURN), try using SYSGEN to rewrite the system tracks.

Once you've recovered all you can from the troublesome diskette, it generally is still usable. Simply format it to write over all tracks. If you get a format error, which is indicated by E instead of F on one track, run the format program again. Usually you will have success this second time. Afterwards, SYSGEN the diskette and it will be ready to use.

SuperCalcette

Have you ever wanted to print your reports without having the border (the letters and numbers that define the coordinate grid) print out as well? There is a simple way to do this.

Press / to start the command. Then press G for the Global options. Next, press B for Border. This removes the borders from the display. The borders will also be absent on any subsequent printout. To turn the borders back ON, repeat the procedure outline above (i.e., type /GB).

Note that if you are using split windows, each window has its own format. The borders may be turned ON and OFF independently of each other.

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User Group Update

New user's groups keep springing up. In addition to the 14 groups we listed in the last issue of *Portable Companion,* we've come up with names and addresses for nine more groups. At the present time, Osborne Computer Corporation provides informal support to Osborne user groups. Most user groups have established one or two key persons who are in-direct contact with the factory.

If you've formed a user group in your area, please don't hesitate to let us know about it. We'll publish the name and address of your key contact in *The Portable Companion.* Without further ado, here's the latest additions to the "OG" list:

Nick Francesco
First Rochester Osborne Group (FROG)
344 E. Main Street
Rochester, NY 14607

Jay Waterbury
Sacramento Users' Group
26 Moonlit Cr.
Sacramento, CA 95831

Ilene Stevenson/Craig Feied
San Diego Users' Group
6904 Miramar Road, #201-202
San Diego, CA 92120

Glenn Evans
San Francisco First Osborne Group
184 Downey Street
San Francisco, Ca 9417

Sam Linder
Fargo's Osborne Users' Group
2613 18th St. South
Fargo, ND 58103

Dale Brown
Central Ohio Osborne Users' Group
3214 Kenny Road
Columbus, OH 43221

Robert W. Fishbeck
City of Austin Osborne Users' Group
1108 Radam Circle
Austin, TX 78745

James Kerr
Virginia Osborne Users' Group
4500 Norman
Portsmith, VA 23703

and our first foreign users' group:

Alex and Debbie
Danny Osborne Users' Group—OSBUG
15227 Russell Ave.
White Rock, British Columbia V4B 5C3 CANADA

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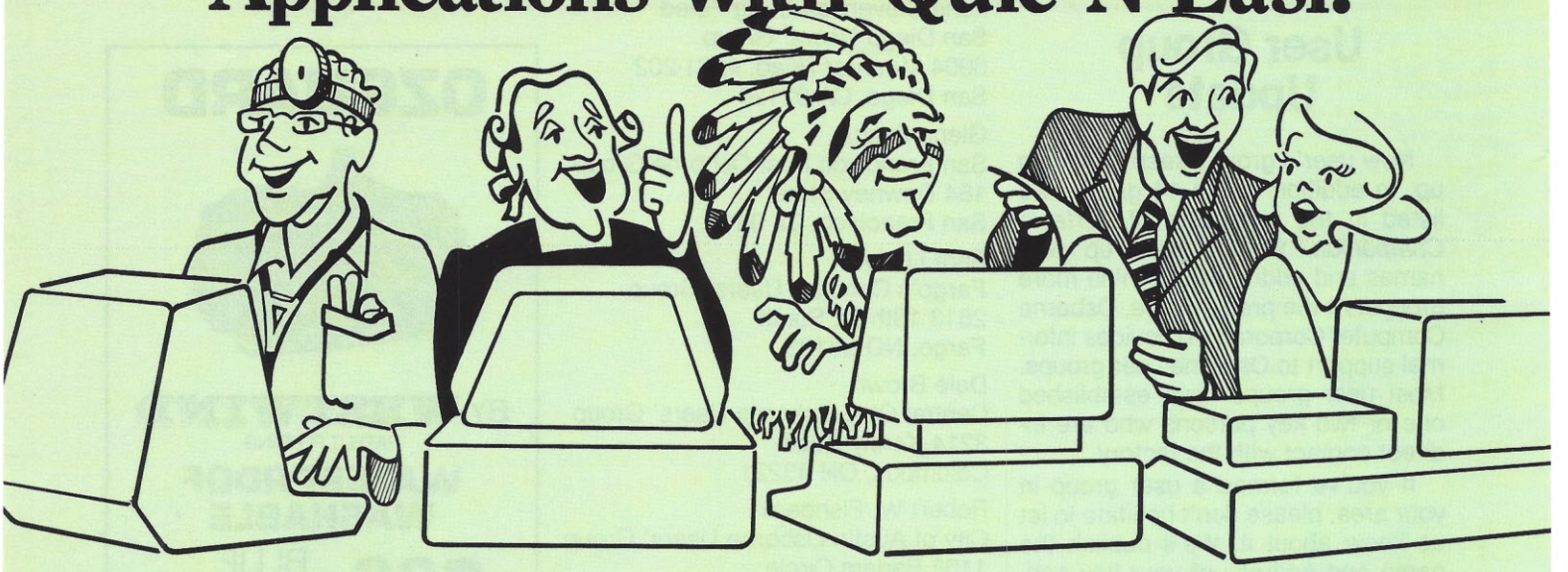

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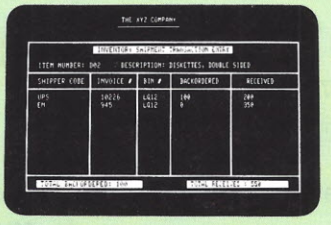

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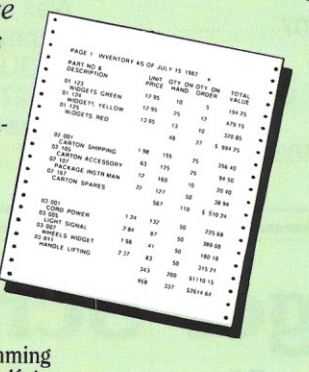

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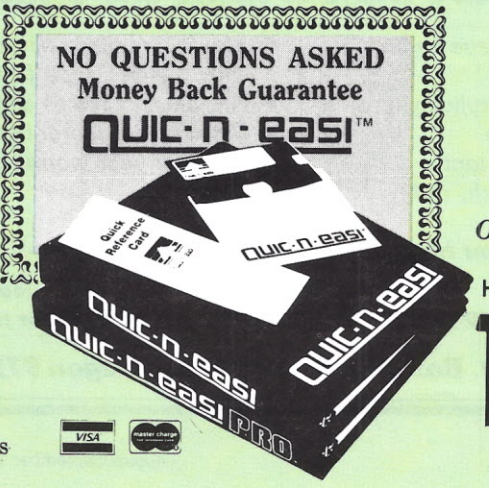

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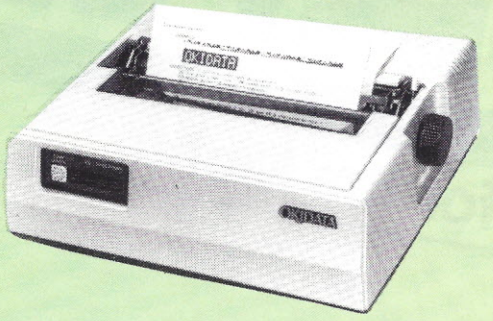

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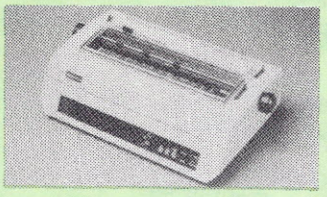

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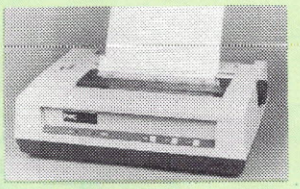

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SPELLGUARD is the most advanced method to ensure that your correspondence and proposals reflect the professional image you want to project.

SPELLGUARD proofreads for spelling errors with astonishing speed and accuracy — about 20 pages in only **one** minute. With such phenomenal speed, SPELLGUARD quickly pays for itself. And SPELLGUARD is so compact that its dictionary is stored in only 53K of memory.

The SPELLGUARD program is so easy to use that it can be run by anyone. HELP instructions are available at every step, and the manual is easy to read and apply. SPELLGUARD is for everyone, even the novice user.

Many advanced features make SPELLGUARD extremely versatile and applicable to each individual's needs. New and technical words are added easily with one keystroke, and unwanted words in the dictionary are as easily eliminated. You can create multiple dictionaries, each with a special purpose, and list these words.

"Every now and then, you find programs that do things right — programs that are a joy to use. SPELLGUARD is like that. If you work with text at all, you'll love Innovative Software Application's SPELLGUARD." Jerry Pournelle, BYTE 11/81

Technical Specifications

Comes with 20,000 word dictionary stored in 53K

Includes a self-checking diagnostic feature that reduces the number of service calls. The local dealer simply runs the software maintenance program before calling for service. This program performs a memory diagnostic (to assess whether the problem stems from hardware or software) and then, using a checksum-like algorithm, determines whether the user has an accurate copy of the SPELLGUARD code.

System Requirements

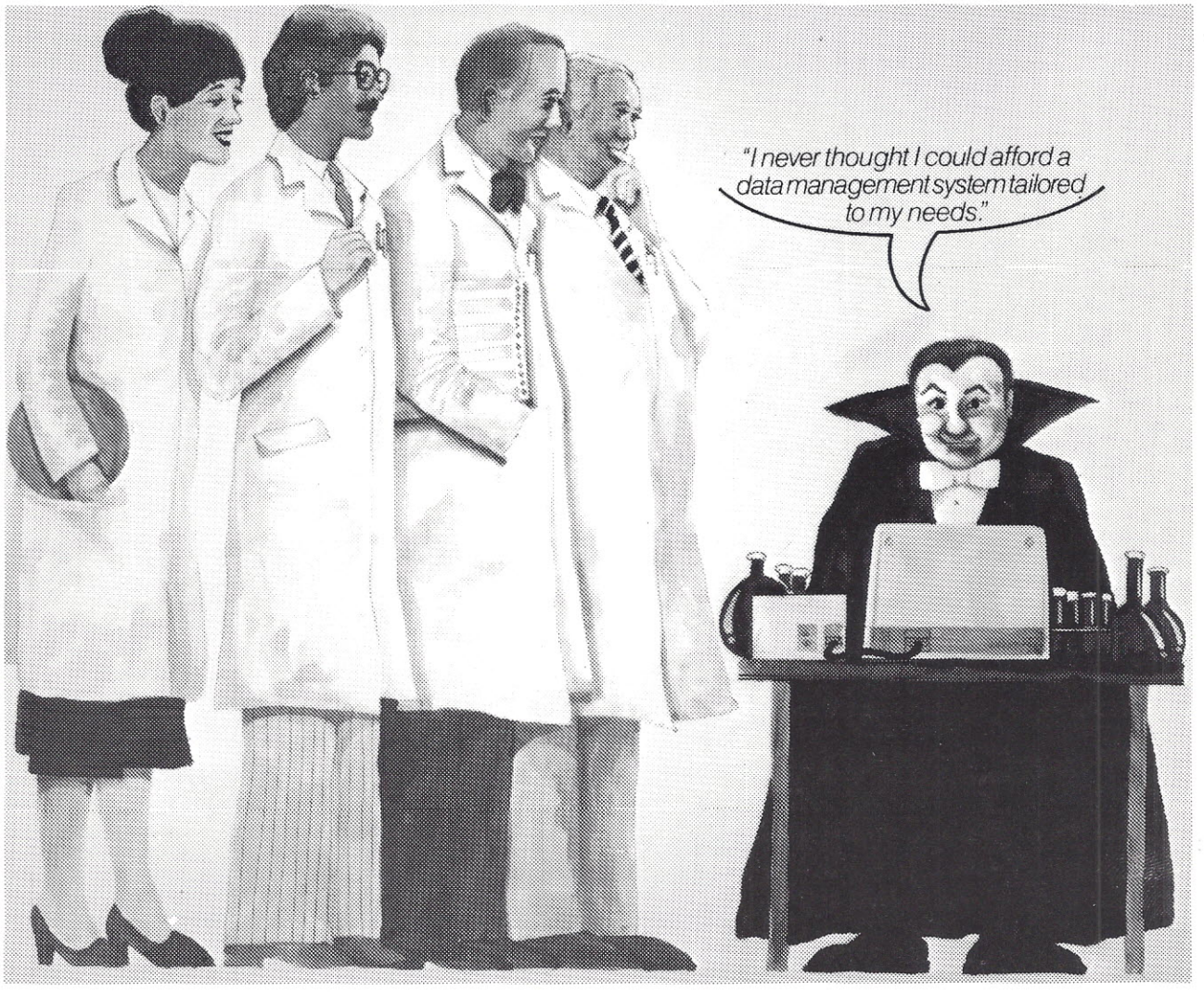
SPELLGUARD comes configured for use on the OSBORNE 1. Double density is recommended so that SPELLGUARD and WordStar may be placed on a single diskette.

(SPELLGUARD is licensed from and a registered trademark of Innovative Software)

Manufacturer's suggested retail price: $295.00

The above software package is available at your local authorized Osborne dealer.

DATABANK: DATA MANAGEMENT FOR AMATEURS



Even "Drac" has trouble convincing people he's an amateur when they see the results he gets on his Osborne 1 with DataBank!

DataBank software and the Osborne 1 system are a powerful combination for creating information management and records processing systems the way you want them.

And, you can do it yourself...even if you've never touched a computer before! There's no cryptic "computerese" to learn with DataBank...it speaks plain language.

Ease of use doesn't limit DataBank's power or performance. All the functions you'll need are packaged in one unified software system: on-line data entry, up to 50 data fields per record, high speed sorting by up to ten (10!) data fields, 10 levels of record selection on all output (reports, letter merges, etc.), reports with arithmetic, query, letter merge, mailing labels, formatted disk file output, and utilities to define your own files, screen formats, menus and reports.

DataBank provides a direct, documented interface with your Osborne's WordStar* Program for letter merges. And, you have a choice: let DataBank read and merge your document; or output a formatted file to disk to use with MailMerge*.

Tight on disk space? There's no need to reserve work areas with DataBank. Assembly language sorts are done in place to optimize available disk storage. Files can span disks too! Up to four drives, including Winchesters, can be used for a single DataBank file. That can mean over 10,000 names per MegaByte on a mailing list!

Want to get into customization? DataBank includes a powerful, well documented MBASIC Subroutine Library for your specialized requirements. It's supplied on the disk in source code so you can see how DataBank works. Using the library, even an amateur BASIC 'grammer can look like a pro in no time.

Documentation? The best...rated excellent by InfoWorld. Over 150 well written pages will "hold your hand" while you put DataBank to work.

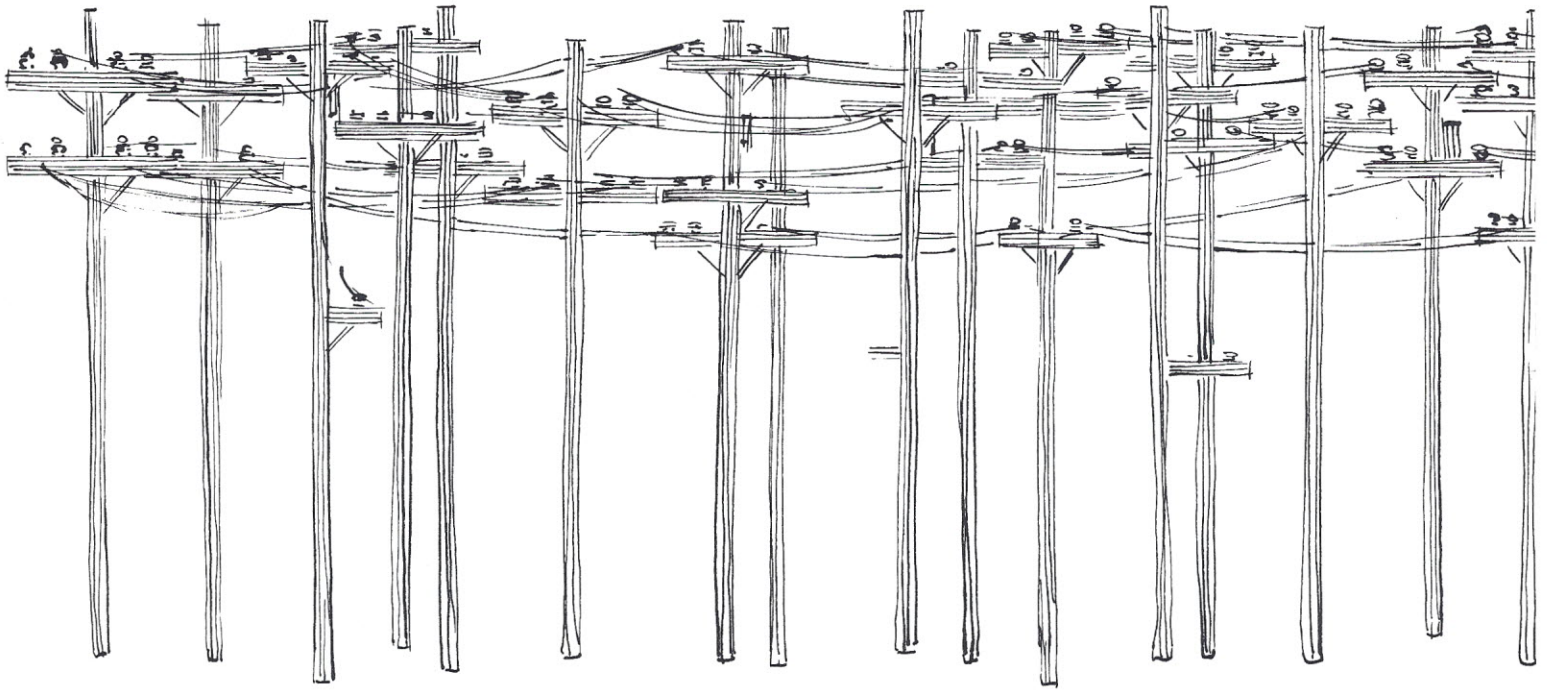
Eight sample information systems are included: a mailing list, inventory, correspondence system, word processing log, client/vendor file, real estate listings, student file, bank loan records. With these, DataBank is up and running the day you get it!

DataBank costs $249. And, it gives you more than other software that costs lots more. Delivery is off the shelf, so get it for your system today. Contact your Osborne Dealer or Data Access Corporation.

DataBank, the data management system for amateurs.

DATAACCESS®
CORPORATION
4221 Ponce De Leon Boulevard
Coral Gables, Florida 33146
(305) 446-0669

*Wordstar and Mailmerge are trademarks of MicroPro International



by Donald Adams

A modem is a device that allows intercomputer communication over a telephone line. The modem is practical because it allows information to be transmitted via ordinary telephone connections, a commonly available, reasonable cost medium.

The word "modem" is an acronym for MODulator-DEModulator, which describes the manner in which frequencies are sent and received, respectively. For communication between two computers, each unit must be equipped with a modem, which converts binary digital data from the computer (1's and 0's) to analog signals suitable for phone line transmission. The transmission is then converted back to binary data by the other computer's modem.

In addition to intercomputer data communications, the modem offers access to free "bulletin boards"; timesharing systems such as CompuServe and the Source; electronic mail, news, and financial reporting systems such as Dow Jones provides; and is even a source of interactive, multiple-player games. Thus, the modem opens up a new realm of economical data communication.

Several features are available with most modems: auto answer/auto dial, frontal light-emitting diode (LED) indicators, selectable baud rates, passwords and security devices, built-in clocks, and even self diagnostics for troubleshooting.

REACH OUT AND TOUCH ANOTHER COMPUTER

Many data communications devices are available in the $200 and up range, most of which are Bell-compatible and feature auto-answer and auto-dial. For example:

ANDERSON JACOBSON Model 247 acoustic coupler. 300 baud, 4 LED indicators, $295.

ANDERSON JACOBSON Model 1256 modem. 1200 baud, 8 LED indicators, $895.

DC HAYES Smartmodem. 30 built-in commands, self-testing, auto-answer, auto-dial, 300 baud, 7 LED indicators, $279.

LYNX Modem. 300 baud, 2 LED indicators, $299.

NOVATION D-CAT Modem. 300 baud, direct connect, 2 LED indicators, self-test mode, $195.

OSBORNE Modem. 300 baud, direct connect, auto-answer, auto-dial, includes AMCALL communications program and cables, $265.

PRENTICE STAR Modem. 300 baud, acoustic coupler, 4 LED indicators, $199.

VEN-TEL MD212 Plus Modem. 300 or 1200 baud, 8 LED indicators, and 5 control switches, self-test mode.

Addresses for these manufacturers and software firms specializing in data communications programs can be found on the Sources page at the back of the magazine (see page 96).

There are two types of modems, those that utilize direct connection and those that use an acoustic coupler. Each has advantages and disadvantages.

The acoustic coupler operates using the phone receiver, which is pressed into the coupler, sometimes called a cradle. The direct connect modem—as its name aptly indicates—plugs directly into the phone jack, bypassing the phone itself. The advantages of acoustic coupling are that it works with almost any phone (not Princess Slimlines, however) and is usually less expensive than the direct connect models, which require a modular phone connector to operate.

The disadvantage of the acoustic coupler is that there is an increased chance of signal interference from outside noise, especially if the phone is not seated properly in the cradle. The reliability of the transmission can be improved with a device called a supermike, which replaces the phone speaker with another more suited to modem frequencies. This problem is eliminated with a direct connection, although the problem could arise from another source—phone line static. For example, static is more prevalent on private and WATS lines than public lines, and as a result the frequency of extraneous characters is increased.

There are two baud rates at which the Osborne operates, 300 and 1200 baud. A 300-baud modem is referred to as a 103/113 type, while a 1200-baud modem is of either the 202 or 212 type. The 202 type modem's signal uses a phase shift to encode characters whereas a frequency shift is used for the 212 types. There is generally, but not always, a reference to Bell system compatibility. The numbers 103, 113, 202, and 212 refer to published Bell standards, but some modems—most notably the 202 and 212 variety—exhibit individual characteristics that make them incompatible with others of the same Bell type.

There are many extras or options that make modem operations easier, more flexible, and more functional. The most basic option is full duplex transmission, which allows communication of data in two directions as opposed to half duplex, which allows for operation in only one direction at a time. Auto answer/ auto dial is a feature that allows for answering without assistance from the user and number dialing from the keyboard. Frontal LEDs are helpful in determining the status of an interchange. They indicate transmission status, connection, "talk" or "data." Other factors that should be considered are size and portability. This last feature is especially important with the Osborne. And don't forget to check out what type of warranty is offered.

After the hardware considerations comes software selection. Micro Link, an Osborne Approved Software product, is suitable for most uses and, unlike some programs, is required on only one end of the transmission. The cost of Micro Link is $89. BSTAM, another Approved Software product, offers the ability to transfer command files and also has an error-checking capability, but it is required on both ends with both systems being CP/M-based. MODEM7 and SMODEM36 are public domain communications packages, and are available to FOG members through the FOG diskette library (see related article, page 22).

The final consideration is how to connect the modem. The Osborne modem is supplied with a short cable that plugs into the modem port, but most others must connect via the RS232 port. The connection is simple, involving only three pins: 2, 3, and 7, with 2 and 3 crossed— called a "null modem cable." Very few modems require additional pin connections.

After obtaining the modem device, it should be connected as directed in its operation manual. The modem/ coupler is usually connected between the modular jacks of the receiver and the phone base.

Before beginning operations there are generally several settings that must be made on the modem/ coupler: the originate/ answer mode, full/half duplex transmission type, and whether you wish to talk or pass data ("talk" is used when not transmitting data, as in voice communications). If the auto dial function is supported, the telephone number of the other system you wish to communicate with usually can be typed from the keyboard. Without auto dial, simply dial the number from the phone and switch to the "data" mode when you hear the connection tone.

Once the terminal ready indicator is ON, the computer is ready for transmission, and it is at this point that all the time and effort begins to pay off as a new realm of communication is possible.

Now let's see, who should I reach out and touch today...

Why Can't Computers be Fun?

by Thom Hogan

Nowhere is it written that computers must be taken seriously. Personally, I regard my computers as tools with which I can perform my job duties more efficiently. Like any tool, however, computers can be fun. And by fun, I don't just mean playing computer games. Enjoyment to some comes from exploration, learning, tinkering, probing, and other informal activities.

You shouldn't be ashamed of anything you might do with your computer. Perhaps you use your Osborne 1 only for word processing; this doesn't mean that you should feel guilty if you have a desire to learn something about programming in BASIC, even if there doesn't seem to be any use to which you could put such knowledge.

Likewise, you should be prepared to deal with situations where you deal with the computer too seriously and therefore miss the simple or obvious solution to a problem. I remember once when I spent over two hours trying to figure out why a particular printer wouldn't work. I had the thing completely disassembled, I was carefully studying the schematics, and I had replaced several critical components when my boss walked over to me and asked me if I had tried plugging the printer into an AC socket. Whoops! Sure enough, giving the printer 110 volts of alternating current was enough to make it run.

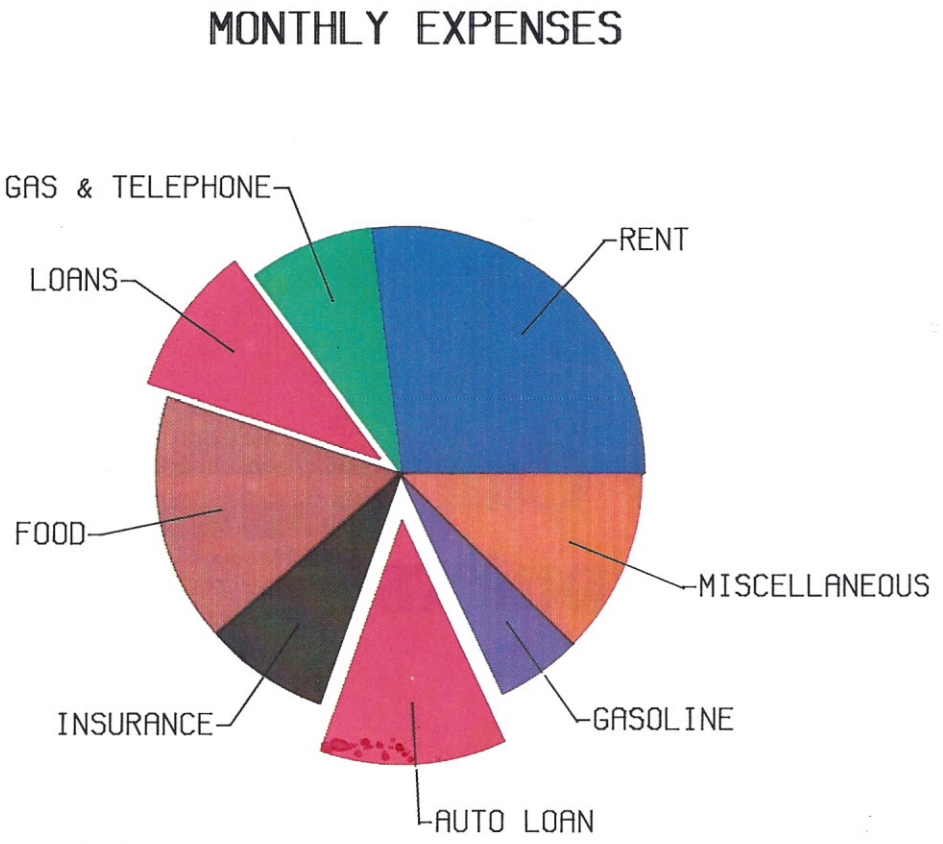
What we often forget when we're using computers is that the computer is extremely dumb. For some reason, using a dumb tool seems to make humans feel ignorant as well. It's far too easy to always blame a problem on the computer. I once got really frustrated while trying to edit a document using WordStar. After getting repeated BDOS ERR ON B: messages, I got out my copy of Disk Doctor to attempt to correct the problem with that diskette. Imagine my surprise to learn that the diskette I thought had my files on it turned out to be a new, unformatted one! I had put my label on the wrong diskette.

I've written some sophisticated programs for computers and I've established myself as one of the preeminent authorities on certain aspects of computing through my books. Even so, I'm human, and therefore I make mistakes. Actually, it might be better to state: I'm only human, and therefore I make my computer make mistakes.

All of which brings me back to the original point of this piece: computers should be fun. If you find that you're getting caught up with the details of how to use a program, or if you find that your inability to figure out how to use the computer is causing your blood pressure to rise, look first at yourself, not the computer.

A computer should make you more efficient, give you satisfaction, or both. We've tried to make your Osborne 1 capable of fulfilling both these objectives. We have fun producing our computer; we feel it's only fair that you should have fun using it.

So, don't let us take computers too seriously, and we won't let you do so, either. The Osborne 1 isn't the fastest, biggest, or fanciest computer you can buy. We'd like to think that you bought yours because it's efficient, useful, low-cost, and fun. As you read this magazine, you should see that these traits are the ones we've tried to instill in it, too.



The Colorful Strobe Plotter

by Art Director*

(Editor's note: We recently received a sample of the Strobe plotter to use. Unfortunately, our technical staff was busy playing Pacman, so we gave the unit to our Art Director to look at. This article is his response.)

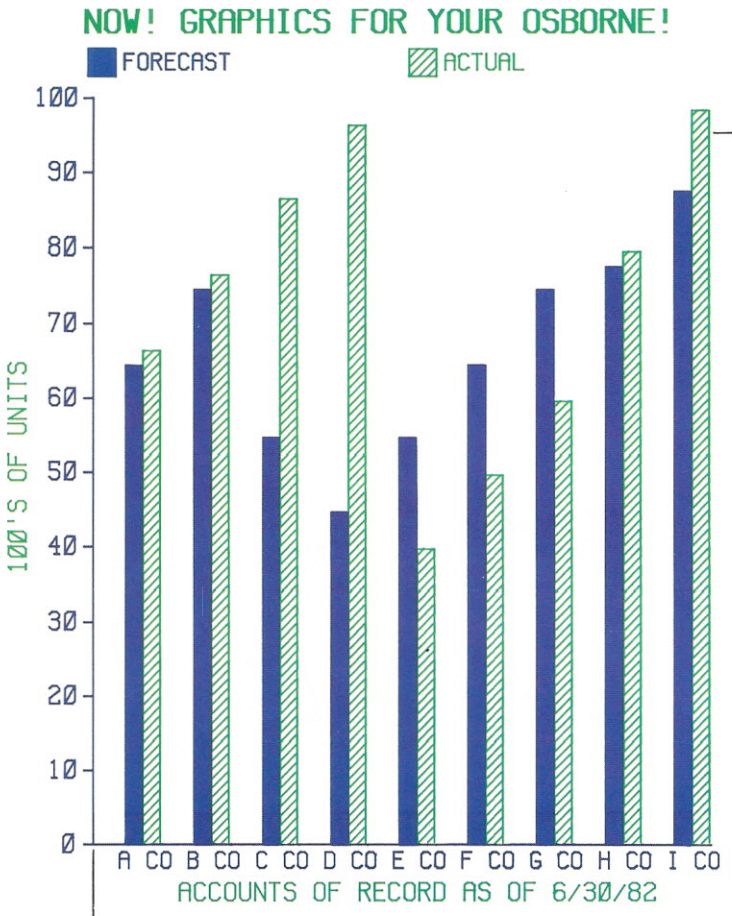
*Art Director is in reality Ken Hirsohn, a product specialist for the Osborne Approved Software program. The opinions expressed about the Strobe plotter are his own.

The cylinder slides gracefully in circles, performing in a virtual symphonic mating dance as the pen lifts, and descends, and slides side to side. Lyrically creating beautiful patterns out of a jolt of electrical impulses, the Strobe plotter whirs and hums. Connected to the Osborne, the combination of mechanical marvel microcomputer and prancing, preening plotter draws a crowd of gaping onlookers wherever it operates.

And what mystery, what wonder are they producing with synchronized timing and precision teamwork? A what? A bar graph? Horror of horrors don't tell me this combination is used for "business applications"! Does the queen do windows? Does the Pope hear confession? What we have here is a graphics generator, meant to tap man's fullest creative potential, to reach his innermost soul and his outermost expression through the combination of man and machine, art and technology.

I certainly can see the advantage to the businessperson in producing multi-colored bar graphs in an instant, using two-part bars (side-by-side or stacked), with solid, blank, vertical, diagonal, or horizontal shading. True, one can save the data in a file to be run thru a straightforward editor to make changes. And the automatic insertion of days or months (up to 24 months!) and a myriad of other features make the plotter a technological marvel for those delegated such mundane and artless tasks.

Let me guess. Does it also produce pie charts? I am not awestruck by the pie chart with its varieties of shading, fifteen section capability, and offset feature to place additional emphasis. Did Michaelangelo paint houses in his times of need? Harnessing the plotter's capabilities to shade by straight line in varying spatial

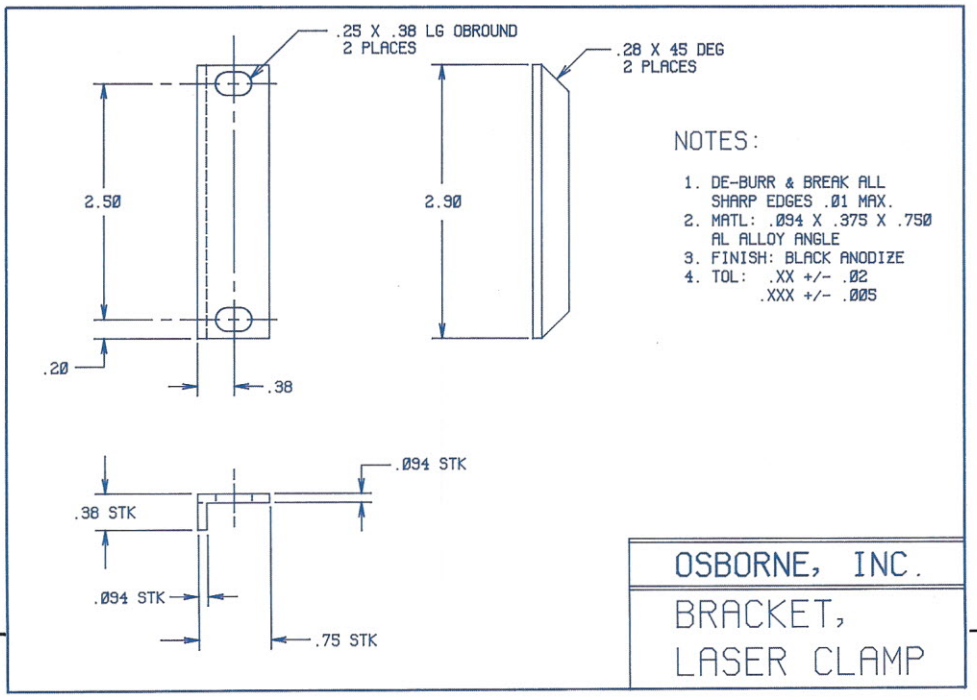


units or angles of differentiation is akin to harnessing Secretariat to grind hops for Budweiser.

Even the sternest critic must face the dilemma presented by the dichotomy of work and pleasure presented by this pictorial wonder. Webster himself straddled the fence, defining graphics as "the art or science of drawing a representation of an object on a two dimensional surface." (Websters New Collegiate, p. 497) Obviously, we create art when we set up our Strobe with alcohol based pen and transparency. What does the aforementioned whirring, spinning, lifting and rolling produce? A bar chart ideal for "overhead projection" displaying last years' sales by month in red contrasted with the same data from the preceding fiscal year in blue. Business 1, Art 0.

However, I digress. If you chose to use this machine to chart widget growth by region (or if you prefer caviar with your Big Mac), that is your decision. One way or the other you should know the pitfalls. First, the paper cuts on my hand are not paper cuts at all but are the result of the absurd method of installing paper under a fixed bar with a razor edge. And the forty-nine cent pen screws in. This of course, delays the operation of an artistic machine while we "screw in" another color.

The Strobe comes with the capabilities to set any current or future designer into orbit. "User-selectable communications protocol," a "high-level ASCII instruction set with 23 graphics commands," and other buzz word infested phrases were sent careening by my head as we installed our "interface" to our "RS232 serial port". While vague on these issues, I could fully appreciate a complete graphics instruction set so Strobe and I can develop a "vivid,pictorial representation of an object on a two dimensional surface", keeping in mind that my "object" will be more strongly influenced by Andy Warhol than Milton Friedman.



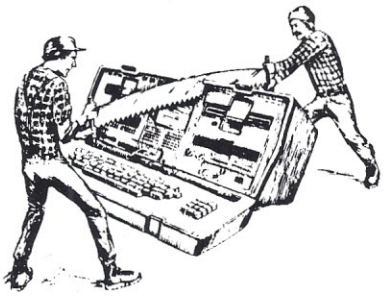
by Thom Hogan

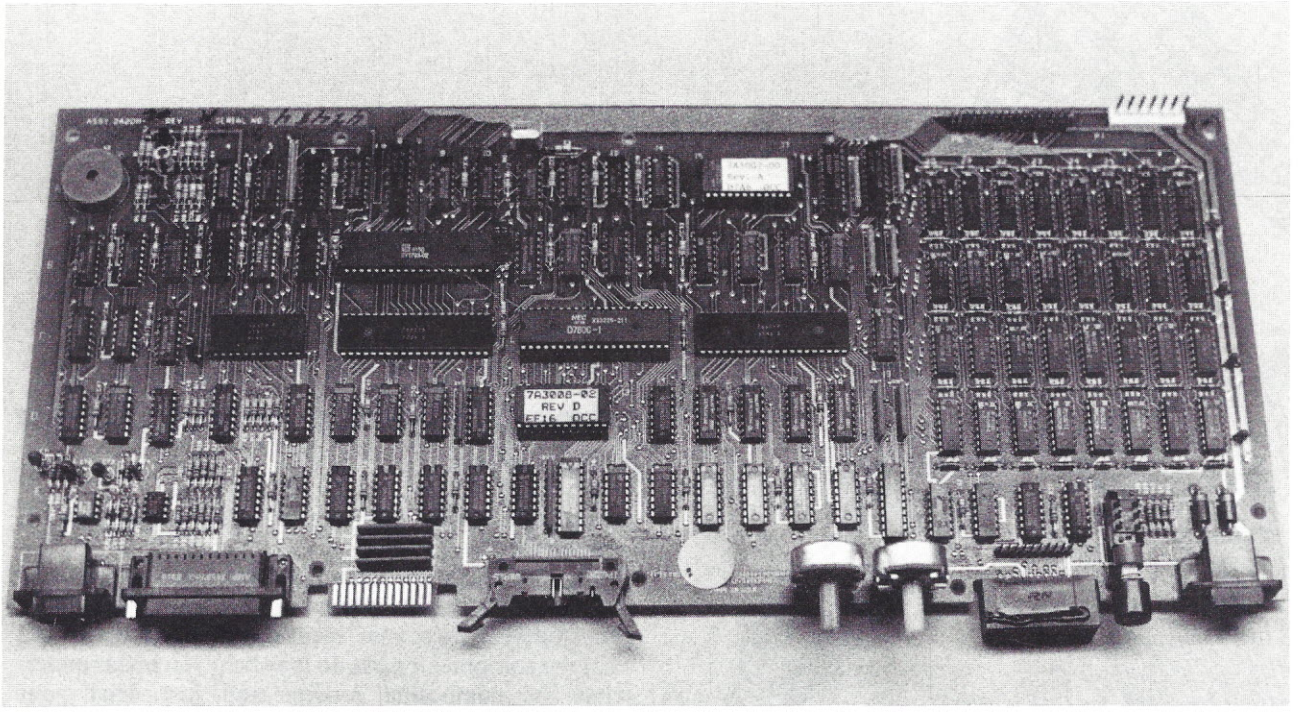
You don't have to know anything about computers to learn to use the Osborne 1.

Nonetheless, knowing a little bit more about your computer won't make it less useful to you; if anything, understanding how your computer is constructed and what the component parts do may help you better understand the computing process and just what your Osborne 1 can do for you.

I want to take you on a words-and-pictures tour of the Osborne 1. I'll try to do so using simple terms and descriptions so that those of you new to computing won't get lost. Before starting on our tour, I should warn you that disassembling your Osborne 1 voids your warranty, and unless you're a computer expert, probably serves no reasonable purpose. This article should present enough information to keep the merely curious among you from disassembling your Osborne.

Inside Your Osborne 1





The brains of The Osborne 1: the main electronics board.

The Principal Players

The design of the Osborne 1 is modular in concept. That means that you can consider "chunks" of the machine as individual components. Here are the modules as Osborne considers them:

- the outside casing and bezels
- the inside chassis (which holds other components)
- each disk drive and its associated motors and electronics
- the CRT display and its associated electronics
- the power supply
- the main electronics board

The only other things you'll find in an Osborne 1 are screws, knobs, and cabling.

To better describe how the Osborne components relate to one another, let me take you on a tour of the Osborne plant as an Osborne 1 is being built. At each step of the process I'll describe the function of the involved modules so that you also develop an awareness of what each component does. Since I'll be describing an Osborne 1 with the new blue and grey case, you owners of original Osborne 1's will have to imagine a few cosmetic differences; there are no functional differences, however.

Incoming

The first step of the manufacturing process is to receive the raw components that constitute the Osborne 1. Keyboards, disk drives, the electronics board, the plastic case, and the 5″ CRT display are all manufactured for Osborne to our specifications by other manufacturers. In some cases, most notably the keyboard, several different manufacturers supply us with the component.

Obviously, therefore, the first step in putting together an Osborne is receiving the material, inspecting it, and getting it ready to be combined with other components. We try to inventory a 30-day supply of all components, but sometimes this has not been possible due to our immense production demands.

The first real steps in manufacturing the Osborne 1 involve the case and the chassis. After initial inspection, some smaller components are added to each. The metal plate that contains the power switch and fuse is attached to the plastic case, for instance.

After being tested, the keyboard is mated with one piece of the keyboard case. The keyboard cable is added, as is the keyboard case top. The keyboard, by the way, contains no electronics at all. Basically a mechanical

Every disk drive is individually aligned and tested before being added to the chassis.

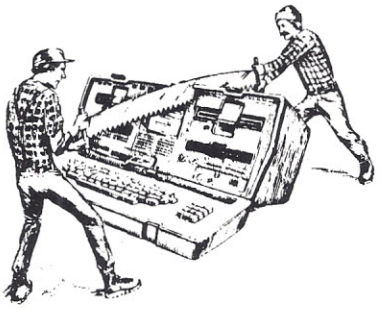
The case finally gets put on and the unit visually inspected.

device, key presses are detected by the computer because when you press down a key it closes a membrane contact on a circuit mounted underneath the keys. Sixty times a second the computer sends a signal to the keyboard. Any keys that are pressed effect that signal, so that by the time the signal gets back to the computer, enough information is coded into that signal so that the computer can interpret which keys are pressed.

Meanwhile, bare disk drives (drives that contain only the mechanical parts) are inspected and then coupled with tested disk drive electronics boards. The completed drive is then put through an alignment and adjustment procedure to ready it for production. Obviously, two such drives are needed for each Osborne 1 to be produced.

Next, the main electronics board is tested and connected to the chassis, as is the power supply. The main electronics board contains ALL of the intelligence of the computer. In fact, without the main electronics board the Osborne 1 would get just as warm, draw almost as much power, weigh almost as much, but be incapable of doing anything at all.

A CRT and disk drives are added to the chassis and now a complete, testable computer unit. At this point, a series of confidence tests that involve all components of the computer are used for the first time. These tests verify that power cables have been hooked up correctly, that disk drives are indeed functioning and adjusted properly, that the memory of the computer is functioning correctly, and that all of the interfaces on the computer



are functional. In addition, a CRT alignment pattern can be displayed to facilitate the adjustment of the display.

Finally, the unit is assembled and the final touches added (like the brightness and contrast knobs). Again, the verification tests are run. The unit is then put on the burn-in rack and a final series of confidence tests is run. These tests make sure that the system can format and run diskettes and that each of the components is adjusted and functioning properly. At a minimum, units stay on the burn-in rack running continuous tests for at least 24 hours. Some units, most notably those begun on Fridays, get 48 hours or more on the rack. Any failure in a unit results in it being taken off the rack, disassembled, and the problem found and corrected.

After burn-in, a final quality control check is made of the unit, a serial number added, and the manual and software packaged with it in its shipping container. Since demand for Osborne 1s is so high, the computer is usually shipped within four working hours of the time it comes off the burn-in rack.

A Closer Look

Well, you now know the process by which an Osborne is built, let's now take a closer look at the main electronics board, which, as mentioned above, is the sole intelligence of the computer.

If you look at the photo of the electronics board, you'll notice a number of things. All those black rectangles are called integrated circuits, generally abbreviated to IC. Several of the ICs are large and complex. The central processing unit (CPU)—a Z80A in the Osborne 1—is involved in everything the Osborne 1 does. At some point or another, all information passes through the CPU, and it is the CPU's interpretation of instructions that results in the computer's execution of

After burn-in, each unit is checked again, even for such small things as loose screws. Note the white glove.

One of many burn-in racks, where each Osborne runs diagnostic tests for 48 hours before being pronounced fit for delivery.

Early in the manufacturing process, keyboards are mated with keyboard cases. Each completed subunit is then tested.

the RAM memory section into a string of dots that are fed to the CRT, which converts that string into 525 "lines" of information.

A Short Philosophy Lesson

The overriding philosophy behind the Osborne 1 design is that the simpler something is, the more "powerful" it is. In other words, if you pare down a product to the bare minimum necessary to perform its

Surrounded by some of over 250 Osbornes being manufactured at this plant, this day, an assembly-line worker makes some final adjustments on a machine.

programs and manipulation of data.

Another large IC is the disk controller chip. The disk controller acts as a quasi-CPU for anything that involves the disk drives. All information to or from the drives is handled through this IC, and it is in close contact with what is happening in the CPU.

Moving to some smaller ICs, the four rows of eight ICs at the right side of the electronics board are the computer's RAM memory. The Osborne 1 has the ability to "remember" 524,288 things. If that number catches you by surprise, that is the number of "bits" of information the Osborne 1 has internally. Eight bits make up one byte (or character) of information, which gives us the 65,536 number that is usually abbreviated as 64K in our advertising literature.

Believe it or not, the elements I've just described are those that make up much of the capability of the Osborne 1. True, there are a lot of ICs I haven't described, but they either perform internal maintenance duties (like keeping everything talking to each other at the same speed) or are involved in the I/O processes (serial port, modem port, IEEE-488 port, or keyboard). The video display circuitry on the Osborne 1 is little more than some electronics which convert bits of information contained in intended tasks you do not add complexity that gets in the way of the task.

In fact, this philosophy carries over to software design, as well. SuperCalc is a good example: with only about 20 commands and a handful of functions you can create and modify just about any kind of chart that involves interrelated data. If you have to learn 400 commands to solve an equation, you're being remarkably inefficient, aren't you?

A close examination of the Osborne 1 shows that we have attempted to follow this philosophy whereever possible. Rather than create a keyboard with dozens of predefined function keys, we instead allowed for a few user-defined function keys. Rather than force the user to resort to elaborate measures to copy information from one computer system to another, we made double density automatically recognize and do the conversion for you.

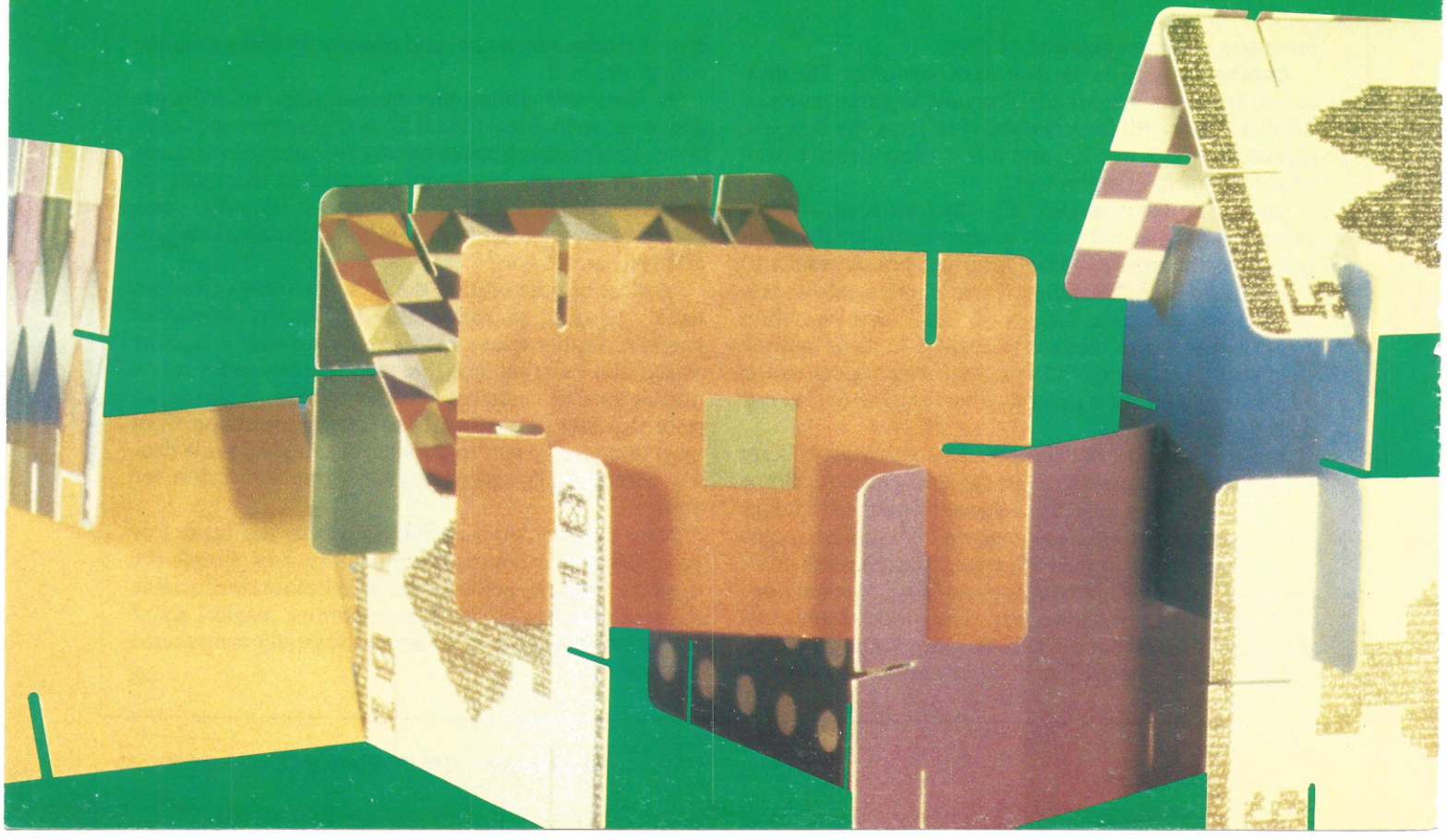
Now that you've been introduced to the insides of your Osborne 1 computer and shown how simple the machine really is, perhaps you'll feel more comfortable the next time you use it. There's nothing magical about your Osborne 1—it is a simple, logically-constructed machine.

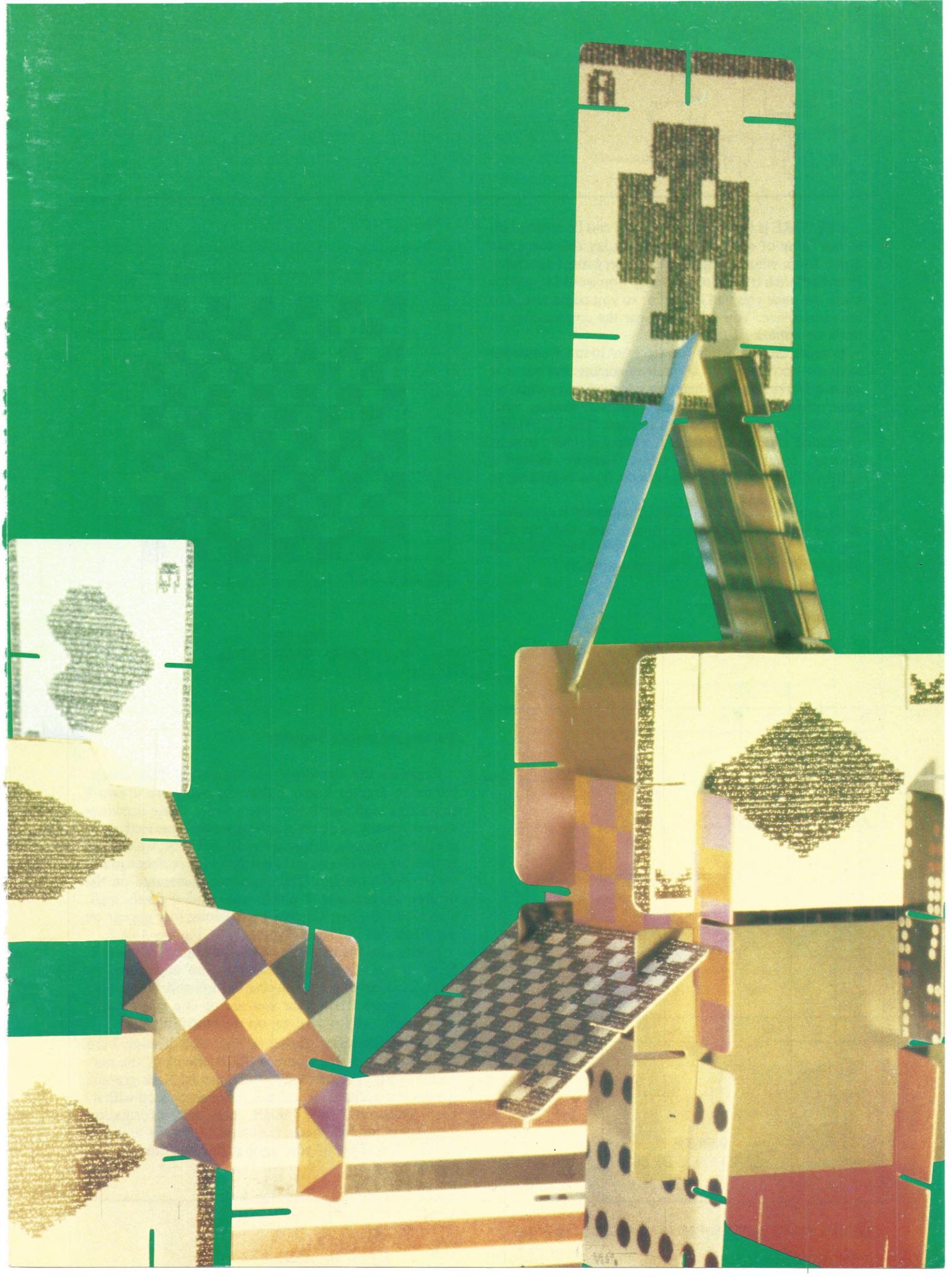
by Gary Cuevas

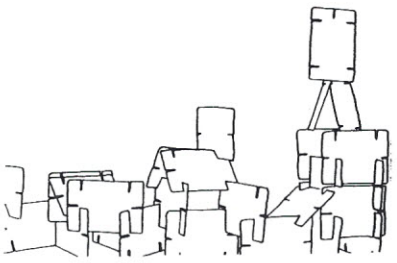
Draw Cards Using MBASIC

The program you are about to write draws cards using the READ and DATA statements in MBASIC. To summarize how this works, let me create a simple analogy. As you read this article, you read each word, letter by letter, until you reach a space. When you see a space, you know that one word has ended and another word is about to begin. When you see a period, you know you have reached the end of a sentence.

Similarly, a computer can be instructed to READ letters (or "strings" of information), but more commonly numbers, from a series of DATA statements contained in a program. Using this ability, we can create a huge table of information and make the computer read specific portions of the table under our control. There is one small problem, however. Under normal circumstances, when a READ statement is encountered in a BASIC program by the computer, the DATA is read starting at the beginning of the table. When the computer is instructed to leave the table to do something else and then encounters another READ statement, it begins reading information from the table at exactly the same place it had previously left off. We shall defeat this feature by creating a second, much smaller table. Our table will use a variety of RESTORE commands.







RESTORE is like a bookmark that can be inserted into our table of data. If you were to lay this magazine down for a while (to go get a mystery-meat sandwich from the lunch truck, for instance) you would somehow mark the page you had left off at so you could return to the same place. You might dog-ear the correct page or use a bookmark of some kind.

Imagine though, while you were out to lunch someone took the bookmark out of your magazine and put it at some different page. When you returned and picked up your magazine, you would find yourself reading what that other person wanted you to read. The RESTORE command allows us to tell the computer where to start reading from our data table, thereby defeating MBASIC's habit of reading strictly from beginning to end.

Once our table of RESTORE commands is complete, all that is required is a small routine that reads the data and draws the cards. But let's stop the theory lessons at this point and start producing some graphics!

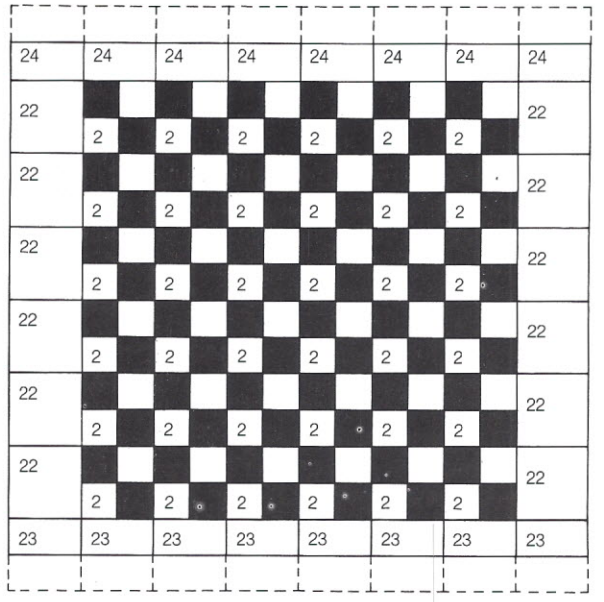


FIGURE 2
CARD BACK DETAIL

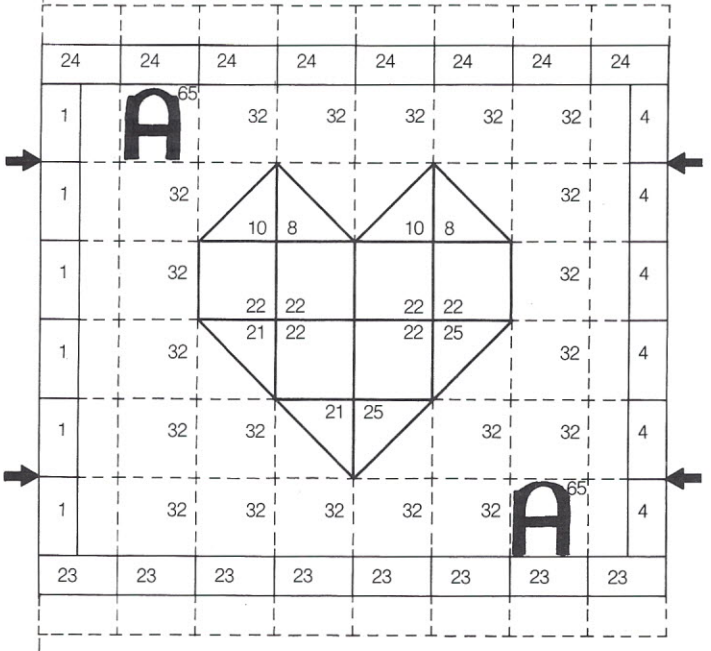


FIGURE 1
CARD FACE DETAIL

Putting the Puzzle Together

Examine the drawings accompanying this article. Notice in Figures 1 and 2 that the cards are drawn 8 characters high and 8 characters wide. These drawings were originally done on graph paper with perfectly proportioned squares. In visual reality, however, we will not be dealing (use a pun, go to prison) with perfect squares on the video display. The characters generated on the display are actually 7 pixels wide and 9 pixels high. Therefore, the cards drawn by the computer appear on the display as in Figure 4 rather than Figures 1 or 2.

Notice also the card suit detail illustrated in Figure 3. Most, if not all graphic endeavors you undertake, require this kind of puzzle piecing beforehand. Remember again, though, that what you see on the graph paper isn't exactly what you'll get on the video display.

The little numbers you see in Figures 1 through 3 are the **Character String** numbers (in decimal) of the particular symbols represented in the blocks. Each graphic symbol has a character string number associated with it. Your Osborne *User's Guide* has this information somewhere near the back. (Some of the newer manuals do not). For those of you without this information, see Figure 5.

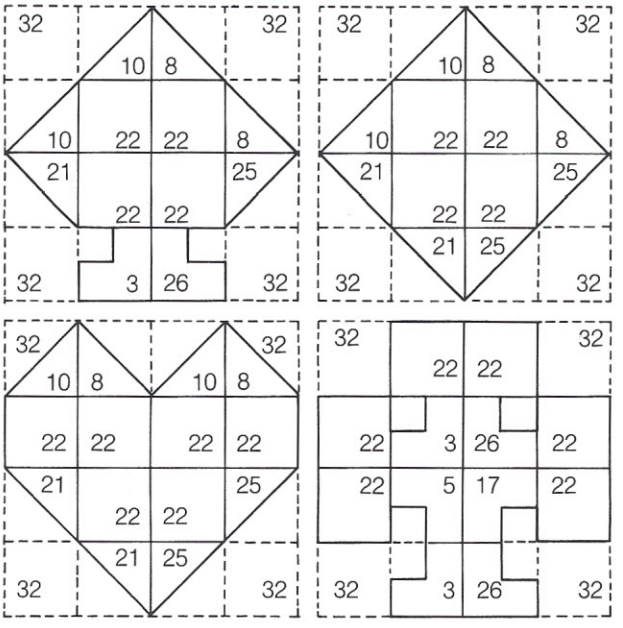


FIGURE 3
CARD SUIT DETAIL

Let's Go!

Okay. Create a diskette using copy and SYSGEN, then use PIP to add the file MBASIC.COM. No other files are required, although you may wish to add XDIR or other programs for your own amusement or edification. Put your new diskette in drive B and put your CP/M SYSTEM diskette in drive A. Boot up and run the SETUP program to modify the diskette in drive B. Program the function keys. (Check your Osborne *User's Guide* if you have never programmed your function keys before). Now program the following four function keys as shown:

```
KEY #7: 1,32,10,8,10,8,32,4,-1<CR>
KEY #4: 1,32,22,22,22,22,32,4,-1<CR>
KEY #1: 1,32,21,22,22,25,32,4,-1<CR>
KEY #0: 1,32,32,21,25,32,32,4,-1<CR>
```

Exit the SETUP program and save the modifications to the diskette in drive B. We have, in essence, just drawn a Heart, including the left and right boarders of a card (see the region indicated by the arrows in Figure 1). Negative 1(−1) is not actually a graphics character, but it must be there nevertheless. The reason for this shall be explained later. We have programmed these sequences of data into our function keys because we can use the same sequences 13 times (Ace of Hearts through King of Hearts). The remaining unique portions of each card must be typed in the normal manner.

Set aside the CP/M SYSTEM diskette and put your customized MBASIC diskette in drive A. Press RESET and restart the system. When you get your BASIC prompt ("OK"), type AUTO 4800 followed by a RETURN. This is where our card data starts. Next,type this (after 4800 appears):

```
4800 DATA 24,24,24,24,24,24,24,24,-1<CR>
```

When 4810 appears, type:

```
4810 DATA 1,65,32,32,32,32,32,4,-1<CR>
```

Now look at Figure 1 and you will notice we have just drawn the top two lines of the Ace of Hearts. Next comes the easy part. When 4820 appears, type:

```
4820 DATA  7
```

Whamola! The data for the third line of the card data appears! Similarly, for lines 4830, 4840, and 4850 type:

```
4830 DATA  4
4840 DATA  1
4850 DATA  0
```

Piece of cake, right? Now, to finish off the card, when 4860 appears, type this:

```
4860 DATA 1,32,32,32,32,32,65,4,-1<CR>
```

Now, when 4870 appears, type:

```
4870 DATA 23,23,23,23,23,23,23,23,-2<CR>
```

Notice the −2 at the end of the DATA statement this time instead of the −1. This is **very important** and is explained later. For now, keep in mind that the −2 tells the computer it has reached the end of a card.

Line 4880 should now show. Type ^C, then list the program. It should appear as follows:

```
4800 DATA 24,24,24,24,24,24,24,24,-1
4810 DATA 1,65,32,32,32,32,32,4,-1
4820 DATA 1,32,10,8,10,8,32,4,-1
4830 DATA 1,32,22,22,22,22,32,4,-1
4840 DATA 1,32,21,22,22,25,32,4,-1
4850 DATA 1,32,32,21,25,32,32,4,-1
4860 DATA 1,32,32,32,32,32,65,4,-1
4870 DATA 23,23,23,23,23,23,23,23,-2
```

Pay particular attention to lines 4820, 4830, 4840 and 4850. If there is a mistake in any of these lines (a common one I made was to accidentally put two commas next to each other) you could end up with 13 goofy looking cards.

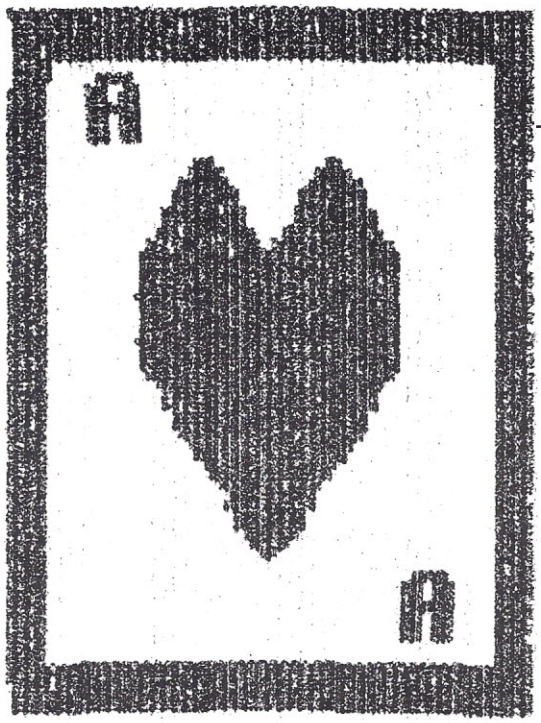


FIGURE 4
ACTUAL APPEARANCE ON MONITOR

Now We're Rolling!

Let's go on to the Two of Hearts. Type AUTO 4880, then type all of the following data:

```
4880 DATA 24,24,24,24,24,24,24,24,-1<CR>
4890 DATA 1,50,32,32,32,32,32,4,-1<CR>
4900 DATA  7
4910 DATA  4
4920 DATA  1
4930 DATA  0
4940 DATA 1,32,32,32,32,32,50,4,-1<CR>
4950 DATA 23,23,23,23,23,23,23,23,-2<CR>
```

Notice the only difference between the Ace of Hearts and the Two of Hearts is the second number of the second line of data and the seventh number of the seventh line of data. (In ASCII; refer to Figure 5 to get the correct number for each card). With 4960 now showing as the current program line, let's continue on and draw the Three of Hearts:

```
4960 DATA 24,24,24,24,24,24,24,24,-1<CR>
4970 DATA 1,51,32,32,32,32,32,4,-1<CR>
4980 DATA  7
4990 DATA  4
5000 DATA  1
5010 DATA  0
5020 DATA 1,32,32,32,32,32,51,4,-1<CR>
5030 DATA 23,23,23,23,23,23,23,23,-2<CR>
```

Continue on now until you have entered the data for all of the Hearts (King of Hearts should end on line 5830). Nice job! Now type SAVE "CARDS" CR and wait for the BASIC prompt to return. Press the RESET button and go grab a beer. You've just completed one-fourth of the deck and you deserve a break.

Now the Clubs

Before we start drawing the Clubs, we need to reprogram our function keys. Proceed exactly as before, but now use this set of data:

```
KEY #7: 1,32,32,22,22,32,32,4,-1<CR>
KEY #4: 1,32,22,3,26,22,32,4,-1<CR>
KEY #1: 1,32,22,5,17,22,32,4,-1<CR>
KEY #0: 1,32,32,3,26,32,32,4,-1<CR>
```

The Ace of Clubs data should start on line 5840 and the King of Clubs data should end on line 6870. Follow the same general procedures as before to create the 13 Clubs.

Now the Diamonds

Reprogram the function keys again and use the following data for Diamonds:

```
KEY #7: 1,32,32,10,8,32,32,4,-1<CR>
KEY #4: 1,32,10,22,22,8,32,4,-1<CR>
KEY #1: 1,32,21,22,22,25,32,4,-1<CR>
KEY #0: 1,32,32,21,25,32,32,4,-1<CR>
```

The Ace of Diamonds data should begin on line 6880 and the King of Diamonds data should end on line 7910. Again, use the same general procedures to create the 13 Diamonds.

And Now the Spades

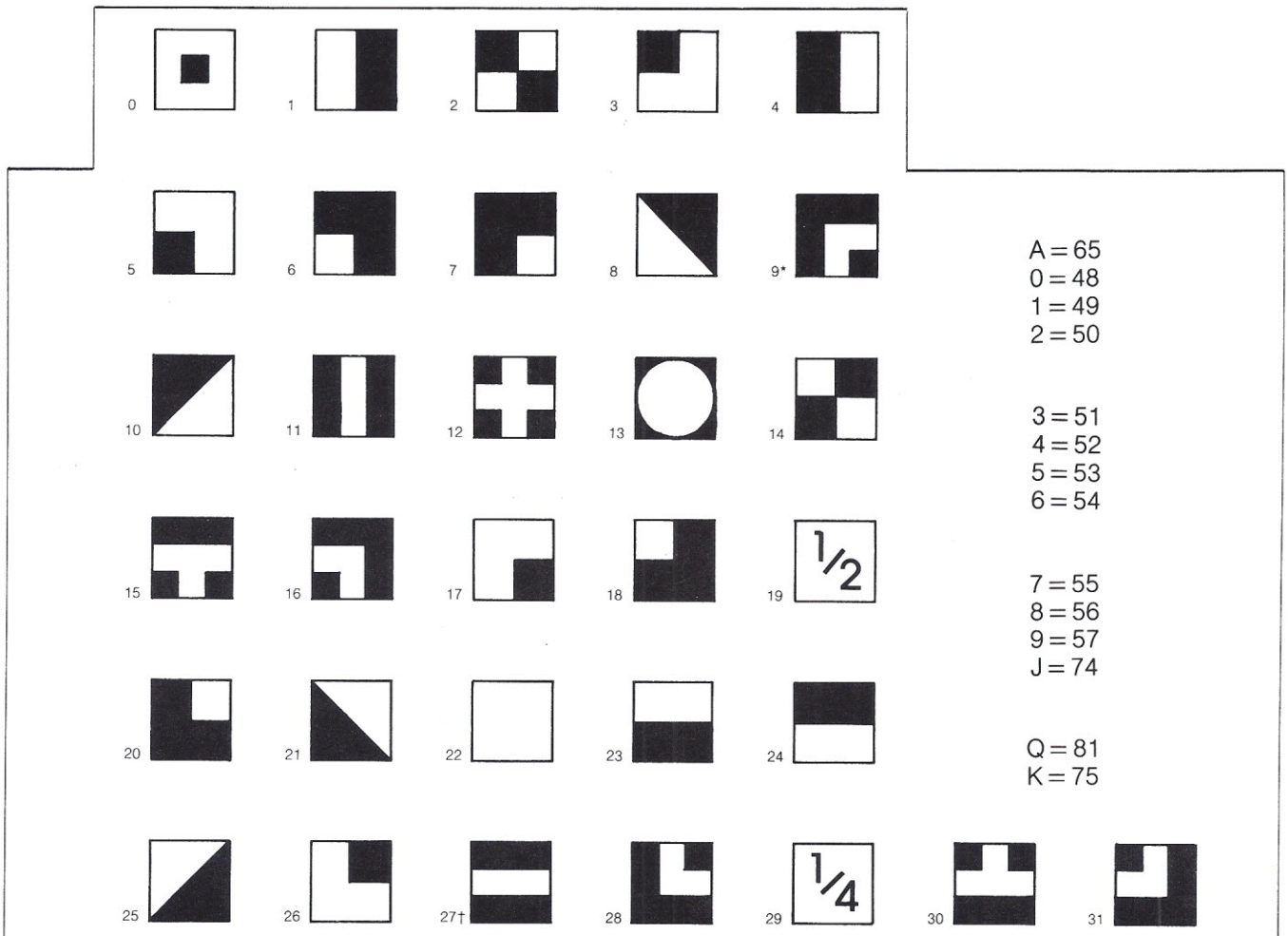
Reprogram the function keys once again with the following data for the Spades:

```
KEY #7: 1,32,32,10,8,32,32,4,-1<CR>
KEY #4: 1,32,10,22,22,8,32,4,-1<CR>
KEY #1: 1,32,21,22,22,25,32,4,-1<CR>
KEY #0: 1,32,32,3,26,32,32,4,-1<CR>
```

The Ace of Spades data should begin on line 7920, and the King of Spades data should end on line 8950. Complete the entire set of Spades using the now-familiar procedures and the data for the entire deck of cards will be nearly complete. The only thing missing is the back of a card.

To draw the back of a card, type the following data:

```
8960 DATA 24,24,24,24,24,24,24,24,-1<CR>
```



* POKE 16750, 195 MUST BE DONE TO GET THIS CHARACTER
POKE 16750, 194 WILL RE-ENABLE THE TAB FUNCTION.

† THE CODE FOR THIS CHARACTER MUST BE INPUT AS CHR$(27) + CHR$(27)

FIGURE 5

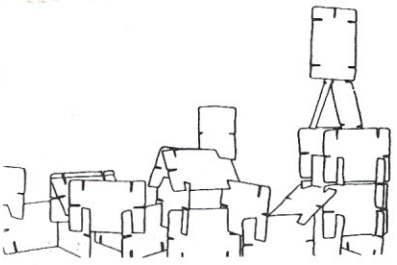
```
8970 DATA 22,2,2,2,2,2,2,2,22,-1<CR>
8980 DATA 22,2,2,2,2,2,2,2,22,-1<CR>
8990 DATA 22,2,2,2,2,2,2,2,22,-1<CR>
9000 DATA 22,2,2,2,2,2,2,2,22,-1<CR>
9010 DATA 22,2,2,2,2,2,2,2,22,-1<CR>
9020 DATA 22,2,2,2,2,2,2,2,22,-1<CR>
9030 DATA 23,23,23,23,23,23,23,23,-2<CR>
```

You did it! Now type SAVE "CARDS" <CR> and list the program. If you were careful about typing in the data, your Ace of Hearts should start at line 4800, and the back of the card, the last card, should end on line 9030. If this isn't the case,you've got troubles; you will have to examine each line of data to find out where the problem is. If all is well, pat yourself on the back, for the most difficult portion of this program is now completed.

The Restore Table

Without the following table, our program would never work (at least not correctly). This table is responsible for telling the computer **where** to begin reading the card data. Ready? Type the following information beginning at line 2000:

```
2000 IF C=1 THEN RESTORE 4880
2010 IF C=2 THEN RESTORE 4960
2020 IF C=3 THEN RESTORE 5040
2030 IF C=4 THEN RESTORE 5120
2040 IF C=5 THEN RESTORE 5200
2050 IF C=6 THEN RESTORE 5280
2060 IF C=7 THEN RESTORE 5360
2070 IF C=8 THEN RESTORE 5440
2080 IF C=9 THEN RESTORE 5520
```



```
2090 IF C=10 THEN RESTORE 5600
2100 IF C=11 THEN RESTORE 5680
2110 IF C=12 THEN RESTORE 5760
2120 IF C=13 THEN RESTORE 5840
2130 IF C=14 THEN RESTORE 5920
2140 IF C=15 THEN RESTORE 6000
2150 IF C=16 THEN RESTORE 6080
2160 IF C=17 THEN RESTORE 6160
2170 IF C=18 THEN RESTORE 6240
2180 IF C=19 THEN RESTORE 6320
2190 IF C=20 THEN RESTORE 6400
2200 IF C=21 THEN RESTORE 6480
2210 IF C=22 THEN RESTORE 6560
2220 IF C=23 THEN RESTORE 6640
2230 IF C=24 THEN RESTORE 6720
2240 IF C=25 THEN RESTORE 6800
2250 IF C=26 THEN RESTORE 6880
2260 IF C=27 THEN RESTORE 6960
2270 IF C=28 THEN RESTORE 7040
2280 IF C=29 THEN RESTORE 7120
2290 IF C=30 THEN RESTORE 7200
2300 IF C=31 THEN RESTORE 7280
2310 IF C=32 THEN RESTORE 7360
2320 IF C=33 THEN RESTORE 7440
2330 IF C=34 THEN RESTORE 7520
2340 IF C=35 THEN RESTORE 7600
2350 IF C=36 THEN RESTORE 7680
2360 IF C=37 THEN RESTORE 7760
2370 IF C=38 THEN RESTORE 7840
2380 IF C=39 THEN RESTORE 7920
2390 IF C=40 THEN RESTORE 8000
2400 IF C=41 THEN RESTORE 8080
2410 IF C=42 THEN RESTORE 8160
2420 IF C=43 THEN RESTORE 8240
2430 IF C=44 THEN RESTORE 8320
2440 IF C=45 THEN RESTORE 8400
2450 IF C=46 THEN RESTORE 8480
2460 IF C=47 THEN RESTORE 8560
2470 IF C=48 THEN RESTORE 8640
2480 IF C=49 THEN RESTORE 8720
2490 IF C=50 THEN RESTORE 8800
2500 IF C=51 THEN RESTORE 8880
2510 IF C=52 THEN RESTORE 8960
2520 IF C=53 THEN RESTORE 9040
2530 RETURN
```

Whew!

And Now, Back to Some Theory

Type the following subroutine, beginning with line 1000:

```
1000 READ X
1010 IF X=-1 THEN 1060
1020 IF X=-2 THEN 1080
1030  PRINT  CHR$(27)+"g";
1040  PRINT  CHR$(X);
1050 GOTO 1000
1060  PRINT  CHR$(27)+"G"
1070 GOTO 1000
1080  PRINT  CHR$(27)+"G"
1090 RETURN
```

This subroutine begins reading card data. The graphics mode is enabled by the command in line 1030. Before a graphic character is printed, though, two checks take place. Lines 1010 and 1020 check for a -1 or -2.

The way our data is set up, 8 graphics characters are printed before a -1 occurs. When this happens, the subroutine turns the graphics mode OFF and issues a carriage return and line feed. The reason the graphics mode must be turned OFF is simple, but not obvious. If the graphics mode were to be left ON during the carriage return, "garbage characters" would be the result. This would happen because the carriage return and line feed would literally be translated as character string number 13 carriage return and 10 line feed! This would cause undesired graphics characters to be printed and, to make things worse, no carriage return or line feed would actually be performed under these circumstances.

The subroutine continues on until a -2 is encountered, which tells the subroutine that the card is now completely drawn and graphics mode should now be turned OFF.

The Finishing Touches

Okay, this is it! Type the following lines:

```
5 REM COPYRIGHT (C) 6/21/82 BY GARY CUEVAS
10  PRINT CHR$(26);
20 PRINT"INPUT C: ";
30 INPUT" ",C
40 GOSUB 2000
50 GOSUB 1000
60 GOTO 20
```

. . . And THAT'S IT!! Now be sure to save your program by typing SAVE "CARDS" <CR> and we're ready to roll. The above routine first clears the screen, then asks for "C", which is the card number. Then the computer references the restore table so the appropriate data is read; next, the computer goes to the subroutine at line 1000 and draws the appropriate card.

Now that I've shown you how to draw the cards, it should be a simple matter for you readers to write a card game to interact with my routines. Anyone for Strip Poker or 52 Pickup on an Osborne 1?

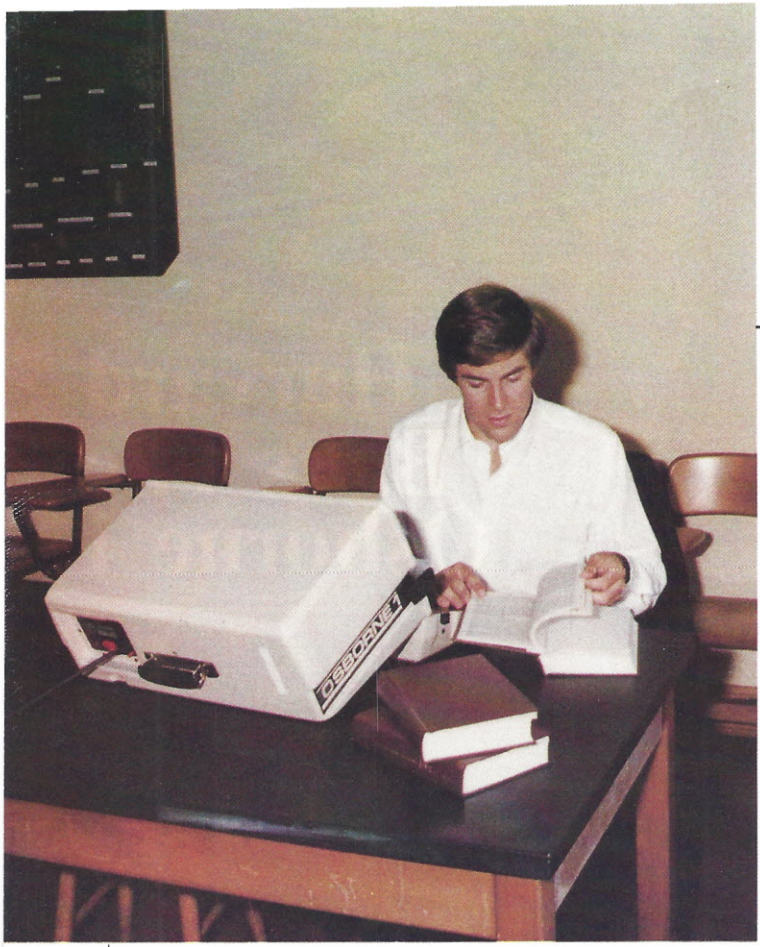
Gary Cuevas is a customer service representative for Osborne Computer Corporation. While not occupied talking with Osborne users and researching answers to their questions, Gary has developed a number of programs in BASIC, including a Blackjack game utilizing the card set described above.

Harvard Bans The Osborne 1

by Jackie Rae

Tony Downer received an Osborne 1 for Christmas last year. Two weeks later he showed up for his first Harvard Law School exam accompanied by his computer, and managed to touch off a controversy that reached the front pages of the campus press, and eventually, the pages of the Wall Street Journal and the New York Times. The issue raised? Do word processors give their owners a substantive competitive advantage in the exam room?

Downer thinks not. Harvard disagrees.



Downer received his machine on December 26th. "Around the corner, staring me in the face, were my first semester, first year law exams." This meant that the 30-year-old student had to learn WordStar before January 7th, the date of his first exam. Having had prior experience on what he refers to as a "primitive" word processor, Downer managed to learn the bare necessities of operating the OSBORNE.

At the Harvard Law School, students have the option of handwriting or typewriting their exams, with a separate room for typists. On the day of his first exam, Downer set up his OSBORNE 1 and Epson MX80 printer in the typing room, and for three hours, bravely faced Alan Dershowitz's criminal law exam. There was naturally an element of risk.

"You only get one shot in those exams," he explained. While Downer prayed for no power outages, a colleague, Wayne Walker, set up his Apple II across the room. Walker's wife was dutifully in tow to help carry the components.

Sometime during the exam, a note was passed to the Dean of Students. When he had finished, Downer was handed a missive that read: "There is sitting in the front row a student who is using what appears to be a word processor. Please have that student contact Mary Upton."

Downer met with Upton the following day, who gave him permission to continue to use his computer for the next two exams. In the meantime, a hearing was to be set up before the college's Administrative Board. Upton explained that her concern arose from "a display of popular anxiety by other students" with regard to the fairness of using a computer.

After his meeting with Upton, Downer decided to let the waters calm and see what happened. After all, the administrative hearing was a few months off and he still had two more exams to prepare for. But the controversy was rekindled in mid February.

"In what must have been a slow news week, a front page story appeared in the Law Record," the publication of the Harvard Law School. In late February, the national press picked it up and the phone started ringing.

To their amazement, both Downer and Walker were contacted and interviewed by the Wall Street Journal. On March 23, a story titled "Will Computer Memories Replace Notes on the Shirt Cuff in Exams?" appeared on the front page of the Journal's second section. Downer then received a call from Time Magazine, who monitored the results of the administrative hearing. A story also appeared in the New York Times in April. Downer says he was overwhelmed by the media attention, but enjoyed the momentary notoriety.

In the midst of the controversy, Walker sold his Apple and bought an OSBORNE because of its lightweight portability and low price.

The Administrative Board finally met in mid April. The board was comprised of the Dean of Students, 3 faculty members and 3 students. Upon admittance to the hearing, Downer and Walker were handed a typed proposal, the contents of which declared that "word processors will henceforth be banned from any and all forms of exams at Harvard Law School." After brief discussion, this proposal was adopted by the board later that night.

The reasons given by the board for banning word processors were that the computer's electronic memory could be used to discreetly store information that could be called up during exams (the counterpart to scribbling notes on one's shirt cuff); that users had an editing advantage, and finally, that computers were economically repressive since many students could not afford one.

Downer, who says he did not have a fair opportunity to address these constraints during the hearing, disagrees on all three counts. First, he dismisses the so-called "editing advantage," explaining that there is no time for editing during a law school exam. "With the time constraints, students just don't have the luxury of editing their work, so the point is mute."

According to Downer, there are many other variables that are far more important than the perceived editing advantage. "If a woman student with a typing speed of 100 words per minute shows up with her Smith Corona, she possesses an advantage where it really counts. This is more important because the advantage is actually utilized, Downer argues.

Downer is also skeptical that storing canned answers would actually prove an advantage. "The nature of a

law school exam is to present unique, unencounterable situations that cannot be anticipated by the student. The situation has to be novel in character, so that the student must apply the concepts learned in a creative, original fashion."

"I opened the door on the 21st century and they slammed the door in my face"

For this reason, Downer is convinced that students would not bother to prepare canned answers. "Their time would be badly spent in preparing and organizing answers to questions that cannot be anticipated."

And finally, in response to the statement that computers are "economically repressive," Downer says this is a highly emotional issue that really has no bearing on the situation. "While this is empirically true, the college allows some students to bring their IBM selectric typewriters, while others use portable Smith Coronas."

There are many other variables that play a role in an exam. Some students think faster, some type faster, and some have better equipment. A computer is just one more variable, says Downer. Typewriter keys jam and ribbons get stuck, and with computers you face the risk of a power outage or hardware problem. Both systems have their drawbacks and advantages. It's whatever works for the student. "I just happen to type faster on a word processor because I jam the keys on typewriters," Downer insists.

"We lost and we lost big," Downer ruminates. As a result of the Administrative Board's decision, Downer relied on his Smith Corona for his second set of exams. Downer feels that the hearing was poorly handled. He believes that a more thorough examination of the issue would have resulted in word processors being allowed during open book and take home exams.

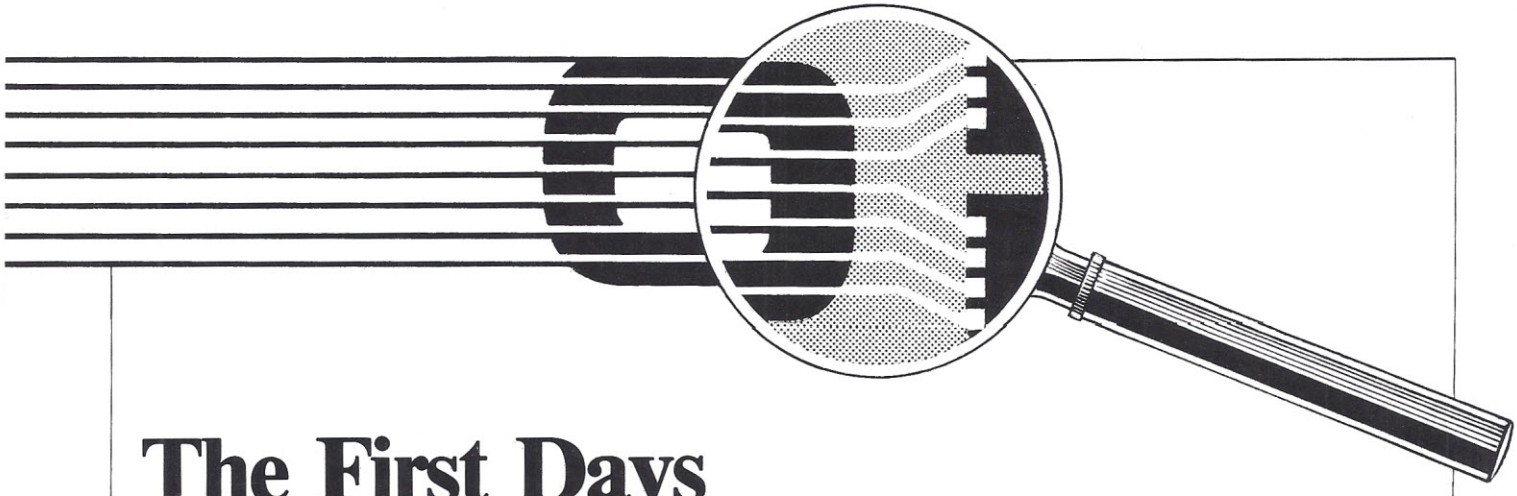
Downer was introduced to the president of the University shortly after the board's decision. When asked to comment on the board's decision, he told the president "I opened the door to 21st century technology and they slammed the door in my face."

Asked whether he thought the issue would be raised again, Downer says that day is inevitable.

He recalled an old James Bond movie "Live and Let Die." In one scene, Bond looks at his Pulsar watch and pushes a button, activating the light emitting display. "At the time I saw that movie there was a collective gasp from the audience. That watch was a special effect at that time. Today, Pulsar couldn't give one away. I saw the movie again recently and when that scene appeared I thought to myself, 'time for him to get a new watch.' "

"A man like Adam Osborne is going to be rewarded for entertaining and pursuing such socially beneficial ideas and placing the computer in the economic reach of most of our society."

Looking into the future, Downer says he can see some guy with his "OSBORNE 6," or whatever, going to Harvard and looking at the question again. "The Osborne's successors are going to cost less and less, making them similar to the calculators of today. At one time a calculator was a luxury item, today anyone can afford one."



The First Days

by Thom Hogan

It just doesn't seem like 15 months ago.

That was when Adam invited me over to a non-descript, single story warehouse in Hayward, CA, where I was greeted by an enthusiastic Marlene Tanner (Adam's executive secretary) and ushered through the front door and into an almost empty 30,000 square foot cavern.

Not quite empty, though. Once my eyes adjusted to the darkness, I noticed that in one corner Lee Felsenstein (designer of the Osborne 1) was hunched over two six-foot tables carefully examining PC boards and mumbling to himself "they really should be working the same." A moment later, Adam popped out of the darkness of a far corner and escorted me to his office—a desk and a chair somewhere towards the back of the building.

This, then, was my introduction to Osborne Computer Corporation. The time was early February of 1981, and OCC—as most of the employees call it—had exactly seven persons working for it, two of which were Adam and Lee.

The Osborne 1 idea goes back further than that, however. Adam claims the original idea had been knocking about for some time, but that the real *serious* decision to make a portable computer didn't come until November of 1980. Adam formed a company, Brandywine Holdings, so that the idea could be pursued, and he set out to find the people to help him accomplish his goal.

Besides Lee Felsenstein, the principal designer, Adam enlisted Richard Frank (president of Sorcim) and a few other key people to help him develop and produce the prototype. By the time I first saw the Osborne 1, the "cruder" stages of development had already been put behind the young company (see photo 1). Those were *real* initial production run PC boards I saw Lee hunched over; there was enough software floating around to know the hardware worked.

Adam talked to me about introducing the Osborne 1 at the West Coast Computer Faire, to be held the following month. It did not strike me at the time, but that meant that only five months elapsed from the time initial work began on the design until the first five working prototypes were seen at the Faire. The initial price Adam discussed was $1495 or $1595, although he admitted that some people he had described the machine to advised him to sell it at $1995. Adam spoke of the $1500 worth of software that he was going to give away with the machine and showed me the first aluminum casings. These were later switched to plastic due to production costs and tooling problems.

I left Osborne Computer Corporation that day not sure if Adam Osborne had become deranged or if he knew something the rest of the world didn't about producing a computer. Like others in the industry, I was skeptical. I wondered about whether the disk drives would lose alignment due to shock and vibrations while being transported; I suspected that diskettes would melt in the enclosed case, since it had no fan; I thought that there must be some shenanigans being pulled with the software in order to include it at the low price of the overall unit. In short, I was skeptical. I shouldn't have been.

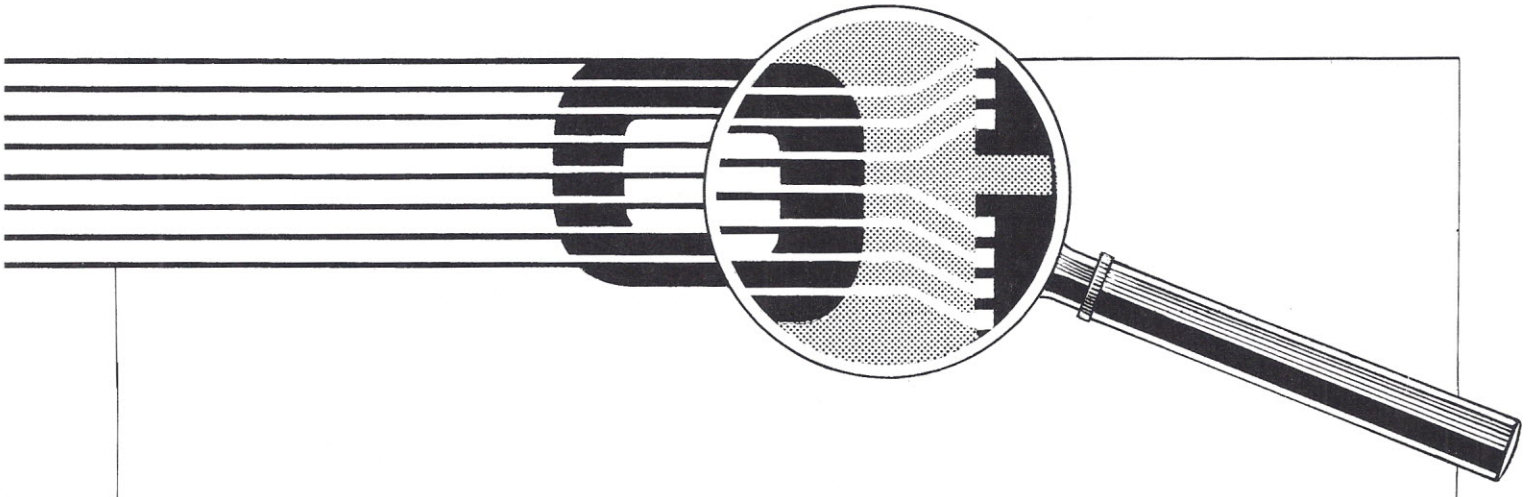
As I think back on the pre-delivery days of OCC, I find myself marveling at how the small group of people Adam collected in February and March of 1981 were able to accomplish so much. With one exception, every one of these people are still working at Osborne. I'd like to briefly introduce those people to you.

Mike Iannimico, who at one time had to write everything that went out the door, now is senior technical writer and the key member of the never-ending

documentation process; Annette Truesdell, who came to Osborne expecting to set up an order entry and customer service department that would have to deal with no more than 10,000 users during the first 15 or so months and now finds herself looking at almost ten times that many; Georgette Psaris and Tom Davidson, vice president of marketing and vice chairman of the board, respectively, who in less than 12 months had to hire, train, coax, prod, and organize a staff of over 300 in marketing and manufacturing operations; and the exception: Barb Burdick, who at one time or another handled the public relations and finances for the firm, but eventually resigned because she got a better offer—as Adam Osborne's wife-to-be.

Obviously, my initial skepticism about the Osborne 1's viability has been completely dispelled. I think that the people who came to work at Osborne before the Faire are to be commended for their creation. It was not obvious that Adam's fledgling computer company was going to be a success back in those early days.

Only 15 months. Considering that even Apple now dates back over six years, what Adam and his small group of believers accomplished seems impossible. I'm glad is *was* possible; I hope you are, too. ◘



Forging Ahead with my Portable Companion

by John Gaudio

(Editor's note: This is the first of a series of articles which introduce *Portable Companion* readers to people who work for Osborne or companies that make related products. J. Gaudio Company was one of the first to introduce cables, switch boxes, and other simple add-ons for the Osborne, and is heavily involved in training and individual consultation.)

I did more business the first quarter of 1982 than in all of 1981. By far the majority of that business can be traced straight back to the Osborne 1.

No, I don't work for Osborne Computer Corporation, nor am I one of their dealers. I'm an electrical engineer, inventor, and entrepeneur, and for the past six years, I've been running a small consulting and design business in the Denver area. In my pre-Osborne days I did custom interfacing, special design, software development, hardware development, and product development with several different types of micros and minis. Then it happened. Last year I went to my local Xerox Store and ordered an Osborne 1. It was the sort of system I'd been wanting for some time. The dual floppies, 64K of RAM, Z80 processor, CP/M operating system, all that software, the I/O ports and the portability made it ideal for my operation.

So how did this small wonder quadruple my business? I received a call from my dealer late one afternoon, informing me that the first Denver-bound Osbornes had arrived. I made arrangements to come in the following morning and take a look at this new marvel. Even my friends at the store hadn't had the chance to learn much about the Osborne yet, but they went out of their way to make the manual, diskettes, and their new machine available to me.

Even with the early manual I found running the Osborne to be straightforward, and within a few hours I'd made backup copies of the system diskettes, written some simple programs, and created some short files with WordStar. I showed these small wonders to the sales representatives and store manager, and was immediately proclaimed "the unofficial Osborne expert in the Denver area." Remember, to be an expert on a given subject requires only that you know a little more about it than the people around you.

Arrangements were made for me to use the store's Osborne on weekends and after hours, as I was still looking at a two month wait for my own machine. Soon I had it interfaced to printers and a modem. I wrote a short assembly language program called TERM300 that turned the Osborne into a terminal, and the people at the Xerox Store started using it to send and receive electronic mail. I then designed a special cable allowing them to print this mail as it came over the telephone line. This later evolved into a product called the Magic Box.

I soon found myself answering many questions for the sales representatives and their customers. There was an obvious need for education and support among the rapidly growing population of Osborne 1 owners, and I started working to fill that need. I didn't charge for

answering questions by telephone, and before long I found that much of my day was spent doing just that. I enjoyed it, made good contacts, lined up some consulting business, and met a number of very interesting people. My telephone answering machine began filling up if I didn't check it at lunch, and business was brisk!

Soon it became necessary to charge for telephone consultations. I still handle questions for the local dealers, and short calls from prospective owners at no charge, as these people are the source of much of my business. I don't generally charge for "telephone quickies" either; these are the quick questions that can be handled in three minutes or less. Don't forget that sometimes a new user misses little things, like using the SETUP program to make his printer run properly, and can spend several hours running down blind alleys. If I take that user through a quick run of SETUP in three minutes, and get the printer working, I'm a hero. It's not that I'm any smarter than the user, it's just that I've run that program a hundred times. The good will and word of mouth advertising I gain for that three minutes can't be bought, and besides, I enjoy it. When the user needs an hour of consulting, or hears about my next seminar, I'm remembered. I charge for longer calls at my regular hourly rate, and this works especially well for those clients living outside the Denver area. It also saves my local clients the cost of gasoline and travel time.

I find that many problems can be effectively solved by phone. In fact, if the client has a modem, I can use the telephone to control an Osborne almost anywhere in the world. If a copy of the program MDM70S.COM is available at the other end (Members of The First Osborne Group, "FOG", can get a copy of MDM70S.COM from FOG library disk #001, and I suggest that any non-members consider joining.) I can receive all kinds of CP/M files by phone; manipulate them with my own Osborne 1; and return them to the customer when I've finished. I no longer work with just the people in Denver, but also regularly receive calls from California, Georgia, Kentucky, Kansas, and New Jersey. Last week I received a call from Israel, and the list keeps growing.

After a while I found that the same questions were being asked often enough to justify putting on seminars. After taking the time to learn even more about the Osborne 1—through trips to Comdex in Las Vegas and the Osborne plant in Hayward—I returned to Denver, and in December I put on the first of my Osborne 1 seminars. It went very well, and I learned a great deal about the needs of the Osborne users.

I have since put on both public and private seminars and training sessions, and have been delighted with the response. Each seminar is an opportunity for me to learn more about the needs of my customers, and refine my presentation to better meet those needs. My seminars are always changing, based on the suggestions and evaluations I receive from the participants. Thanks to their input, the seminars are constantly improving.

My seminar services recently expanded, and now include assistance in planning seminar facilities and programs. In the future I expect these seminars, and the related services, to be offered outside the Denver area as well.

One of the most enjoyable projects I've undertaken was to help organize the Denver Osborne Group, which started with a core group from my first seminar, and continues to grow. All members are expected to contribute, and I find that many times even the newer members provide valuable information.

The third part of my business involves product development, and is a natural offshoot of the first two. When a customer wanted to tie the Osborne 1's RS-232 port to a modem, I built a special cable. When the need arose to tie in both a printer and a modem, the Magic Box was created. The high static voltages I found while visiting Las Vegas brought about the creation of the Static Leash. As other needs arose, special products were developed to fill them. Every one of those products came as the solution to someone's specific problem.

The combination of teaching, consulting, and product development for the Osborne 1 has proven to be most enjoyable, and profitable. I use my Osborne, the software that came with it, and a letter-quality printer to do mailings, keep track of customer lists, develop software, (including assembly language programs) and of course to write articles such as this. I also use my Osborne 1 to send articles by phone to my friends in the FOG.

The Osborne 1 is more than just another computer. It's not just cheaper, or just profitable; it's not just the fact that it comes complete with such powerful software; nor is it just the telecommunication capabilities built into it. Each of those pieces has been available for years, but only with the Osborne 1 did it all finally come together in a single package. The Osborne already changed my operation drastically. I'm convinced it will change the way the world does business.

I think a special thanks is due Adam, Lynn, Georgette, Lee, Thom, Maureen, Carrie, Ginger, Dennis, Roger, and many others with Osborne Computer Corporation. These people are turning Adam Osborne's dream into reality, and that's changing my world.

John Gaudio is 28 years old and a graduate of the University of Colorado's Electrical Engineering program. He holds patent #4,262,338 for "DISPLAY SYSTEM WITH TWO-LEVEL MEMORY CONTROL FOR DISPLAY UNITS" and has been running his own independent company since 1976.

Mailing Labels With dBASE II

by David Gute

```
*
*
* Convert format of information to label format
*
*
SET FORMAT TO PRINT
USE <filename>
STORE Ø TO X
DO WHILE .NOT. EOF
     STORE TRIM(FIRSTNAME) TO FIRST
     STORE TRIM(LASTNAME) TO LAST
     STORE TRIM(CITY) TO CIT
     STORE TRIM(STATE) TO STA
     STORE (FIRST + ' ' + LAST) TO NEWNAM
     STORE (CIT + ', ' + STA + ' ' + ZIPCODE) TO CSZ
*
*
* Time to write the labels
*
*
     STORE X+1 TO X
     @ X,1 SAY NEWNAM
     STORE X+1 TO X
     @ X,1 SAY ADDRESS
     STORE X+1 TO X
     @ X,1 SAY CSZ
     STORE X+6 TO X
     @ X,1
     SKIP
ENDDO
SET PRINT OFF
RELEASE ALL

(<filename> should be replaced with the appropriate
name of your file.)
```

Figure 1

Those of you who purchased dBASE II may have been trying to figure out how to make your new software purchase print mailing labels. Two possible methods exist to do so.

The first method uses dBASE II to handle the entire task. The second method shows how to translate a dBASE II data file into one that WordStar and MailMerge can use.

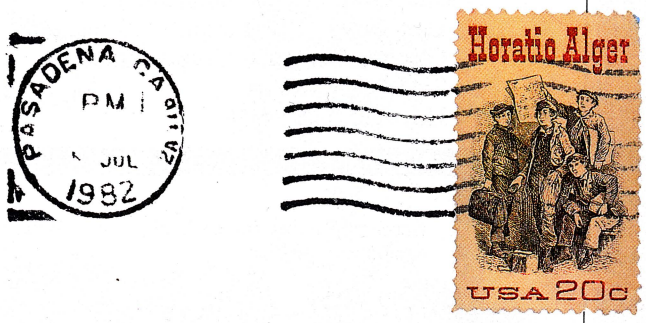
If dBASE II looks a little tricky to use at first, it's because of the large number of functions available to the user. You should be much more comfortable using some of dBASE's functions after reading and trying this example. The TRIM function, for instance, is one which is often misunderstood, yet simple to use.

Let's get started. Define an example data base structure as follows:

FLD	NAME	TYPE	WIDTH
001	FIRSTNAME	C	011
002	LASTNAME	C	015
003	ADDRESS	C	026
004	CITY	C	020
005	STATE	C	002
006	ZIPCODE	C	005

Next, enter some data into your new data file. Once you've done that, the first thing we need to do is to get rid of any blank spaces left in any field (dBASE II fills fields with spaces when an entry doesn't completely fill it). We delete the spaces by using the TRIM function. One word of caution: you cannot use TRIM with an indexed file; dBASE II bites you if you try.

Now enter the dBASE II program in Figure 1. The program deals with nine-line labels; you might have to modify it for other label sizes. Use the DO function to run the program and create mailing labels using only dBASE II.



The next step is to take the same file and to convert it to a file compatible with WordStar and MailMerge. Type the following commands while in dBASE II to do so:

```
SET DEFA TO B
USE <filename>
COPY TO TEMP FIELD FIRSTNAME, LASTNAME, ADDRESS, CITY, STATE, ZIPCODE, DELIMIT
QUIT
```

This series of commands creates a WordStar non-document file called TEMP.TXT; this file is delineated with commas (i.e., each field is separated by a comma).

Now create the WordStar document file shown in Figure 2. You are now ready to print your labels using the merge-print option of WordStar.

Figure 2

```
..WordStar file to print dBASE II labels
.OP
.MT Ø
.MB Ø
.PL 9
.DF TEMP.TXT
.RV A,B,C,D,E,F
&A& &B&
&C&
&D&, &E&  &F&
.PA
```

(Make sure that you don't type a carriage return after the .PA)

NOTE

Users' Survey

We're reprinting the User Survey introduced in the last issue in hopes that those of you who didn't have time to respond will take this opportunity. We appreciate the feedback!

Please return this questionnaire to:

User Survey, The Portable Companion
Osborne Computer Corporation
26538 Danti Court
Hayward, CA 94545

Check the boxes for each piece of equipment you own:

- ☐ PRINTER
  - ☐ Epson
  - ☐ Okidata
  - ☐ NEC dot matrix
  - ☐ IDS Paper Tiger
  - ☐ Centronics
  - ☐ NEC daisywheel
  - ☐ Diablo
  - ☐ Qume
  - ☐ Olivetti
  - ☐ IBM Selectric
  - ☐ Other _____
- ☐ MODEM
  - ☐ Novation
  - ☐ Hayes
  - ☐ Other _____
- ☐ HARD DISK
  - ☐ Corvus
  - ☐ Trantor
  - ☐ XCOMP
  - ☐ Other _____
- ☐ LARGE SCREEN
  - ☐ Osborne 12"
  - ☐ Zenith
  - ☐ NEC
  - ☐ Television set
  - ☐ Other _____

What Osborne peripherals do you intend to purchase?

	will purchase	considering purchasing
Double Density	☐	☐
80-column	☐	☐
Modem	☐	☐

What peripherals NOT in the above list should Osborne manufacture?

_____

_____

_____

Rate each piece of software we provide with the Osborne 1.

	use all the time →				never use
WordStar	☐	☐	☐	☐	☐
MailMerge	☐	☐	☐	☐	☐
SuperCalc	☐	☐	☐	☐	☐
MBASIC	☐	☐	☐	☐	☐
CBASIC	☐	☐	☐	☐	☐

What additional software products are you interested in obtaining (Osborne or other manufacturer):

_____

_____

_____

_____

Has your Osborne 1 ever been in for repair work (other than the keyboard upgrade)? ☐ no ☐ yes

for what?

_____

_____

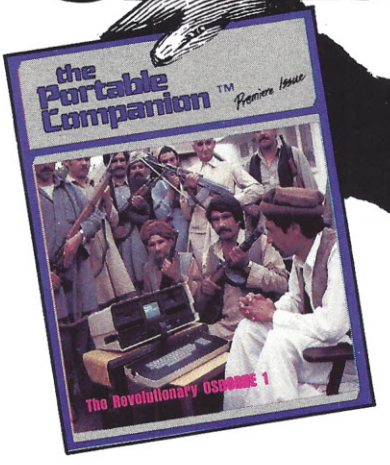
_____

If you could change only ONE feature on the Osborne 1, what would it be and why?

_____

_____

We now make HOUSE CALLS



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- Get the most out of your computer with short cuts and helpful hints
- Crammed full of product evaluations, application ideas and solutions to common problems
- Provides a forum for user ideas and feedback
- Keep up to date with what Osborne User groups are doing across the nation
- Dr. Adam Osborne's "From the Fountainhead" is resurrected

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the Portable Companion™

OSBORNE

Software now available for the Osborne 1

DocuMate/Plus™
This is an indexing program that works with WordStar® to create an automatic text index or table of contents. It supports up to 8 levels of sub-indexing using either words or phrases.
(Orthocode™)

Disk Doctor™
Reclaims damaged diskettes and allows you to create accidentally erased files. Disk Doctor helps the Osborne user to restore damaged or faulty diskettes, recovering as much data as it can. As an added benefit, Disk Doctor can also certify new diskettes and eliminate bad sectors. (Supersoft®)

Math* ™
Adds basic math capability to WordStar®. Math* performs addition, subtraction, multiplication and division in rows or columns. (Force Two®)

Enumerator™
Enumerator adds variable line numbering abilities to your documents. With Enumerator, you can number by line, paragraph, or any sequential pattern (ideal for attorneys). (Orthocode™)

The Micro Link©
For phone communications, this easy-to-use package allows the Osborne user to interface with electronic bulletin boards, information services, other remote computers, and sends and receives files. (Wordcraft™)

Datebook™
This popular program handles calendar and appointment schedules for the busy executive or professional. A valuable tool for time management, Datebook keeps a permanent record of each day's activities for future reference. (Organic Software, Digital Marketing®)

Spellguard™
Spellguard pinpoints spelling and typographical errors in written materials with its 20,000-word dictionary. The dictionary can be expanded to include technical words, foreign languages, etc. (Innovative Software®)

SuperSort™
Performs sorting, merging, and record selection functions on data files. SuperSort is compatible with Basic, Fortran, Cobol and assembler programs, and can be used with mail lists maintained with Mailman™ and WordStar®
(MicroPro™)

Personal Pearl™
The easy way to create custom application programs through English language interaction with your Osborne computer. Personal Pearl asks you for examples of the results you require from your Osborne and then produces an applications program.
(Relational Systems International®)

Mailman™
Mailman creates and manages your mailing list. Formatted screen entry with eight different selecting criteria gives the user ease of access and entry, along with discrete listing capabilities.
(Standard Microsystems®)

Milestone™
Milestone is ideal for the planning, priority scheduling and tracking of small projects. Milestone creates Gant project charts and can be configured to find the critical path of a project. (Organic Software®)

Money Maestro™
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Footnote™
Footnote numbers and formats footnote calls and the actual notes in WordStar® text files. Footnote numbers notes consecutively, and formats the file, placing the notes at the bottom of the appropriate page, or moving them out of the text to a separate footnote file. (Pro/Tem Software, Inc.®)

DataStar™
DataStar is an easy-to-learn, versatile and comprehensive data entry program, retrieval and update system for your Osborne. DataStar handles recordkeeping applications from initial form design through updating, addition/deletion, and search/retrieval of records.
(MicroPro™)

dBase II™
dBase II is a powerful, data management tool for constructing and manipulating numeric and character information files. A special feature of dBase II is its own English-style program-building language. You may SORT, EDIT, or DISPLAY a database directly from the keyboard, or write menus and programs to support your specific applications. (Ashton-Tate, Inc.™)

MBasic Compiler™
Allows Osborne users to compile their MBasic interpretive programs. The Basic Compiler provides you with three major benefits: 1) increased speed of execution for most programs; 2) decreased program size for extremely large programs;
3) source code security. (Microsoft, Inc.®)

These software packages are available at your local Osborne dealer.

DATASOURCE

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Fortran 80	Microsoft	500.00	**395.00**
CB80	D. Research	500.00	**420.00**
Condor I	Condor	295.00	**225.00**
Condor II	Condor	595.00	**450.00**
CrossTalk	Microstuff	150.00	**140.00**
Quickscreen	Fox & Geller	150.00	**140.00**
Disk Doctor	Supersoft	100.00	**95.00**

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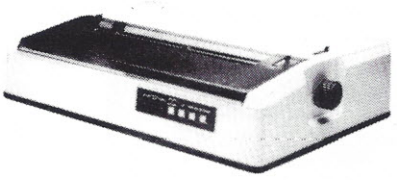

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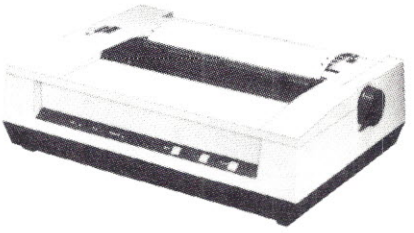

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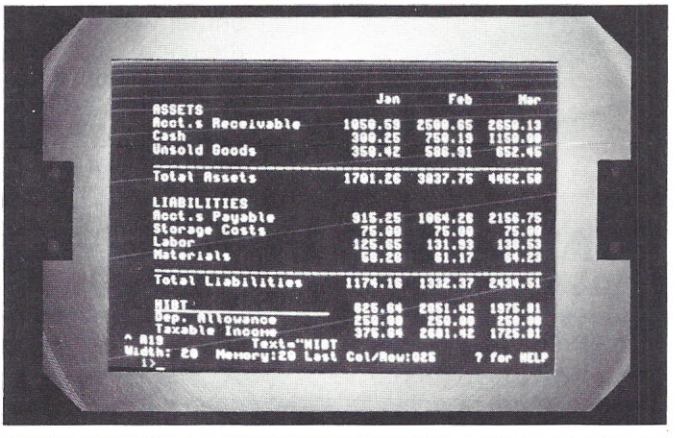

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SNAKE RACE allows up to nine players to race slithery snakes at five skill levels. The action never stops, as more and more obstacles appear in your pathway to be avoided. Most of 'em just slow you down or give your tummy a friction burn, but look out for the exploding mines!

ARCADE PATMAN

Furiously as you navigate the maze, gobbling up crumbs as you dodge the five vicious beasties close on your tail. Quickly you duck out the left side, dodge back on the right, and make a run for the big **ENERGY DOT** in the corner. Once you make it you'll be safe for a moment. You'll even get a chance to revenge yourself by gobbling up the monsters—if you can catch them!

This terrific assembly-language program is a lookalike for the tremendously popular video arcade game with a similar name. You'll be amazed at the number of hours you can waste trying to master these monsters! Use the arrow keys to change direction, and listen closely for the three warning beeps that tell you when the frightened monsters are about to turn frightening again . . .

All in all, this program is rated A+ for action, graphics, excitement, and just plain enjoyability.

PUBLIC DOMAIN PACKAGE

This package contains ten diskette sides absolutely packed with great programs! Many are from the CP/M users group material, with some altered programs formatted especially for the OSBORNE and some new material, all of it in the public domain. These diskettes are available at $20 each, or $90 for the entire package, including:

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```
A > PIP A: = B: ACCNT 1. DAT [V]
```

Your computer's language.

```
CP PLUS DISK FILE COPY
This facility allows copying of files
from one disk to another.
YOUR CURRENT DISK IS DRIVE A. DRIVE TO COPY TO? B
FILENAME OF FILE TO BE COPIED?      ACCNT 1. DAT
```

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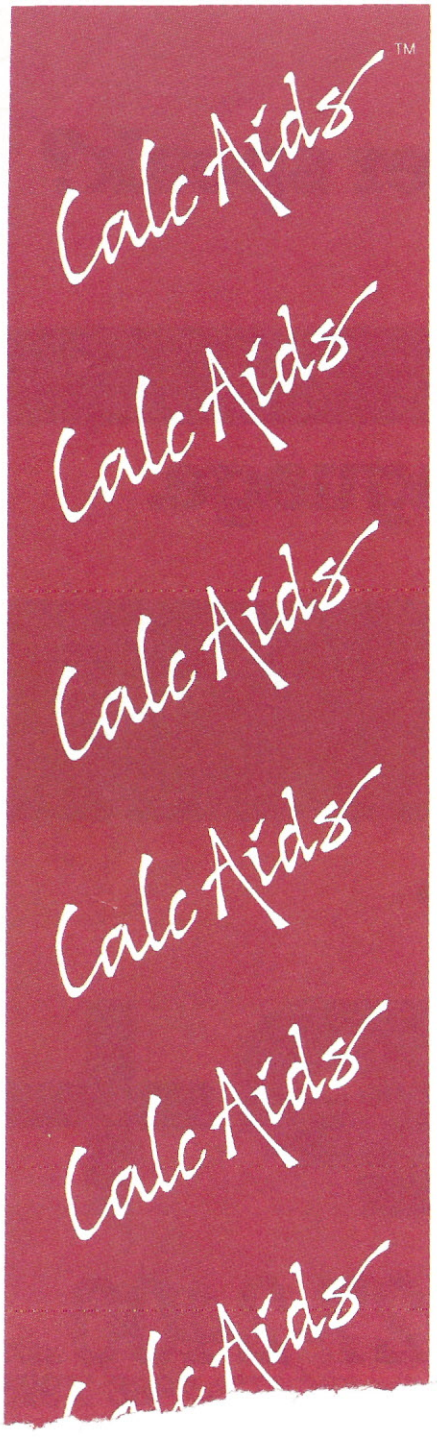

Try Programming With SuperCalc

by Thom Hogan

Last month, we presented a completed SuperCalc worksheet—one designed for use as an expense report form for a businessperson on the go. Your reaction to our first CalcAid was positive, but you also indicated that you thought we had started in the middle of the book.

For that reason, this month we'll be going back to the beginning; I'll show you how simple SuperCalc is to use, point out some tricks that aren't elaborated on by the *User's Guide,* and help you through a few simple exercises that should increase your understanding of how to use SuperCalc to program your computer to want it to do.

Calc Programs

rting place for
I happened to
elf, where the
n BASIC Pro-
orne/McGraw-
1979; ISBN
tting.
u who aren't
ok, it is a com-
imple, often-
s that can be
er programmed
The book in-
calculating
uture values,
of numbers,
statistical analysis, and even the day of the week.

Each program in the book is prefaced with an explanation of the problem, a listing of the common formula used, and an example. Following this, a "run" (execution) of the program and the listing of the program are printed. In short, this is a good book for beginners who have need for the types of calculations covered by the book.

The book is also good because it breaks every problem into its simplest components, and adds no superfluous detail. As I thumbed through the pages refreshing my memory, I decided that here was a good starting point for converting a problem into a SuperCalc solution. I became more convinced of this when I saw the advantage of showing the same program solved using both BASIC and SuperCalc.

At random I picked the program for calculating the depreciation rate of an item. Depreciation rates are easy to understand—if you buy an item for one price and after it has been held for one year it is only worth half the price, it has depreciated 50 percent.

The components of this calculation are:

- the original selling price
- the final selling price

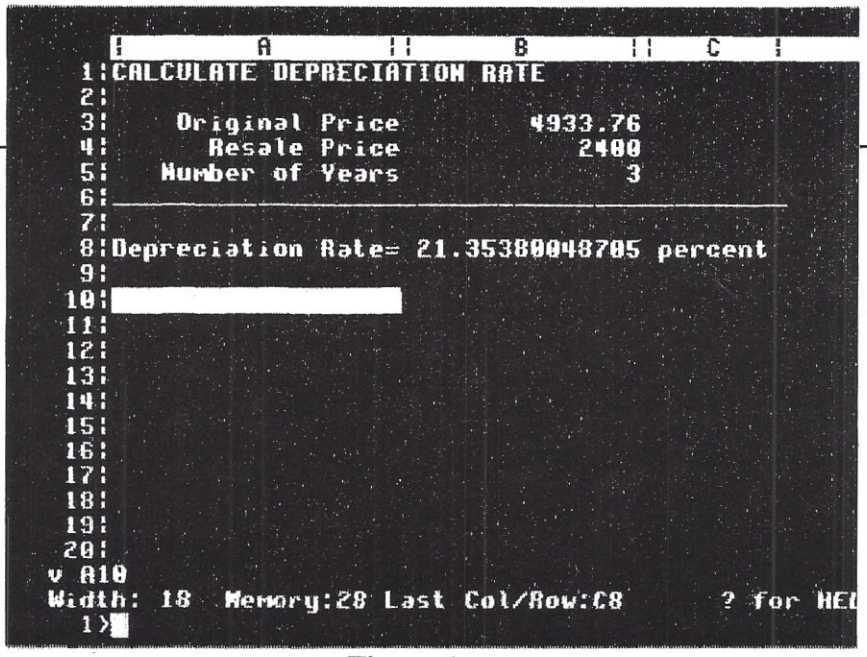

Figure 1

- the amount of time between acquisition and sale

Common BASIC Programs lists the formula for calculating the depreciation rate as follows:

$$\text{depreciation rate} = 1 - \left(\frac{\text{resale price}}{\text{original price}}\right)^{1/\text{age}}$$

In other words, first divide the resale price by the original price, then raise this number to the power of 1 divided by the age, then subtract this number from one.

The book lists the BASIC formula for making this calculation as:

DEPRECIATION = 100*
(1 – (RESALE/ORIGINAL)
(1/AGE),

(I've expanded the variable names to fully expose what each is used for—Osborne/McGraw-Hill uses single-letter variables, as that is the least common denominator among BASICs.)

Of course, the program in the book also includes INPUT statements to get the values, and a PRINT statement to display the final result.

Before going any further, let me show you how to accomplish the same thing with SuperCalc.

First, let's take care of some visual aspects. I'll set up my formatting of information first by typing the following SuperCalc commands:

/FCATR18 format column A text justified right in 18 spaces

/FCB10 format column B 10 spaces wide

Adding my text gives me the screen that appears in Figure 1.

Next, I'll enter some values in column B to represent the numbers I want to deal with. I'll use Osborne/McGraw-Hill's example values of 4933.76 original selling price, 2400 current value, and 3 year age.

Last, I'll enter the formula to perform the actual calculation of the depreciation rate:

100*(1 – (b4/b3) ^ (1/b5)

The "*" indicates multiplication, the "/" indicates division, and the " ^" indicates "raise to the power of." The final result, 21.354 percent, appears as soon as the formula is typed.

Ah, the result I listed in the last

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paragraph is a rounded one, not one precise to 16 digits as SuperCalc presents. What if you wanted the result to appear as rounded to the nearest 1000th of a percent? or 100th?

Well, *Some Common BASIC Programs* provides that answer, as well. In their depreciation rate calculation, they use the following formula to perform rounding:

(INT(1000*DEPRECIATION+.5))/1000

This formula presents the results to the nearest 1000th of a percent. To round to the nearest 100th, substitute 100 for each 1000 that appears in the example. To round to the nearest 10th, substitute 10 for the 1000's.

To prove that the foregoing works, type in the following formulas somewhere on the SuperCalc worksheet:

(INT(1000*B8+.5))/1000
(INT(100*B8+.5))/100
(INT(10*B8+.5))/10

Try putting different numbers in the original price, resale price, and age entries and see what happens. You should verify that the rounding just described works correctly.

The reason the formula shown works is simple. First, you move the decimal point of the number to the left an appropriate number of spaces (i.e., if you want to have three digits of precision to the right of the decimal point, move the decimal point three digits to the left—multiply by 1000). Next, add .5 to the result. If you already had a remainder of .5 or greater, then the number to the left of the new decimal point will be raised by one; if the remainder was less than .5, the number to the left of the decimal point stays the same. In short, you are rounding the number to the left of the decimal point. The INT (or integer) function lops off the decimal remainder, leaving only the rounded number, albeit with the decimal shifted several places to the left, which is the reason you need to divide the whole result by the number you originally multiplied by (to get the decimal point back to the correct location).

Pretty straightforward, wouldn't you say?

Some Hints of Complexity to Come

Just so that you non-novices have something to mull over until next time, I want to close this column with another simple application, but one which uses two different SuperCalc functions that aren't elaborated upon in the Osborne *User's Guide.*

The functions I want to quickly demonstrate are AVERAGE and COUNT. The problem I'll use to demonstrate their use is a statistical one: calculating the average of a group of numbers.

Here's the numbers we want to use:

2 3.4 3.41 7 11 23

Most everyone knows that to find the average of these numbers you add them up (49.81), then divide by the number of numbers you started with (6). This works out to 8.3.

You could do this in SuperCalc by entering the numbers in column A, then entering the following formula:

(SUM(A1:A6))/6

An easier way is to use the built-in SuperCalc averaging function, like so:

AVERAGE (A1:A6)

No big deal, uh? Okay, put both formulas into your worksheet and try Blanking one of the values in the A column. What happened? Only the

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```
SuperCalc ver.  1.07
CALCULATE DEPRECIATION RATE
A1 TL     = "CALCULATE DEPRECIATION RATE
A3        = "Original Price
B3        = 4933.76
A4        = "Resale Price
B4        = 2400
A5        = "Number of Years
B5        = 3
A6        = '
B6        = '
A8        = "Depreciation Rate=
B8        = 100*(1-(B4/B3) (1/B5))
C8        = " percent
```

SuperCalc AVERAGE function is giving you the correct answer, as you have that "/6" in your other formula, and there aren't six numbers anymore.

The AVERAGE function, therefore, is of most use when you don't know how many numbers are going to be entered into an area, but you need the average of however many *are* entered.

There is another way to solve this problem—use the COUNT function built into SuperCalc. Try the following formula and see what it does:

(SUM(A1:A6))/(COUNT(A1:A6))

Sure enough, you get the same answer.

The Lessons Learned

I haven't gone into elaborate detail here; the object is to take some simple problems and show how you can solve them using SuperCalc.

Pay particular attention to the lesson in the second half of this CalcAid, however, as it will prove to be a base upon which we continue to build from: the built-in functions within SuperCalc. Some of the other functions we'll be encountering in later adventures are:

ABS—absolute value
EXP—raise "e" exponentially
LOOKUP—Search for a particular value in a block
LN—Natural LOG
LOG 10—LOG base 10
MAX—maximum value
MIN—minimum value
NPV—net present value
PI—Pi
SQRT—the square root of a value

These might not seem like the likeliest candidates to simplify a programming job in SuperCalc, but trust me, as time progresses, you'll learn to value the shortcuts these functions allow you to take.

By now you may have noticed that I refer several times to "programming in SuperCalc," yet SuperCalc isn't a programming language. Or is it?

I've yet to find any program I had been using that was written in BASIC that I couldn't somehow convert to be more functional in SuperCalc. SuperCalc's primary limitation seems to only be its use of memory, which can be a bit on the hoggish side. Aside from that, almost anything I used to use BASIC for I find I can do in less time and more conveniently using SuperCalc; that's what I call programming.

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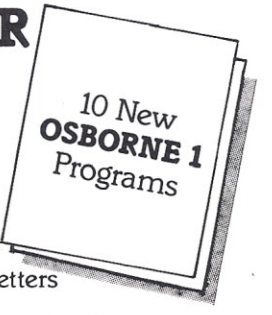

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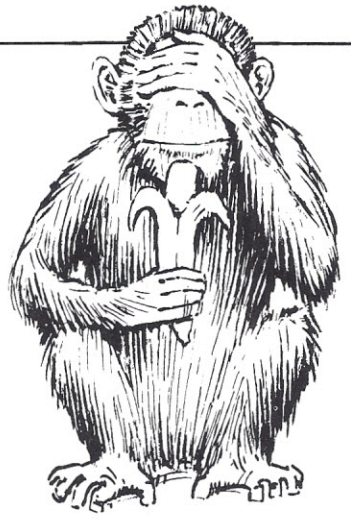

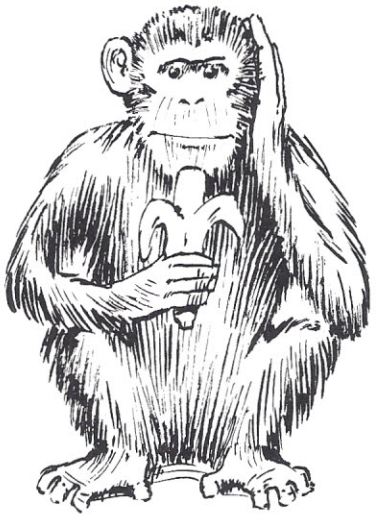

Get the Monkey Off Your Back and Start Calculating

Well, the puzzle in our last issue seems to be making monkeys of us all. After mulling the problem over for awhile, I came up with the answer of 3 inches. That's not right.

In fact, we had three brave readers who sent us in their answers to the question posed by our Puzzler: how long is the banana. Since none of the four is correct, we thought we'd keep you hanging for another month and give you intrepid cogitators a second chance at figuring out the correct answer. Herewith the erroneous answers:

We Have No Banana

The monkey has eaten all of the banana; there is none left. The length of the banana is 0. I solved it by reading it.

Steve Hochschild
Austin, TX

Come Up Short

Here is my solution and answer. A more appropriate question might have been to determine the coefficient of friction of the rope that keeps the monkey from falling.

1) mother + monkey = 30
2) monkey's mother = 1/2A
A = 38
B = 1/2C
C = 4D
D = 2E
E = 1/3F
F = 30G
G = 1/4 monkey now

or

monkey's mother = (1/2)(3)(1/2)(4)(2)(1/3)(30)(1/4)(monkey's age)
monkey's mother's age = 15 times monkey's age

3) 15M + M = 30
M = 30/16
monkey = 1.875 years = length of rope
mother = 28.125 years
weight of rope = 1/3(16*1.875) = 10
weight = monkey = 28.125
4) 1/2(28.125) + banana = 1/4(28.125) + 10
banana = 17.03125 – 14.0625
= 2.96875 ounces
banana = 2 oz per inch, or 1.484375 inches.

Therefore, the banana is 1½ inches long.

Michael Brassil
no address given

And The Length is . . .

Re: the Puzzler in your first issue: I suppose the banana is 5¾ inches long.

The problem scarcely requires a computer; it doesn't even need pencil and paper. What it *does* need is a bit more careful proofreading and/or composition.

That extended, intended-to-be-complicated paragraph concerning the monkey's age is, of course, the problem. If you set the age of the monkey as equal to X and work backwards to get a reading on the monkey's mother's age, you quickly encounter the following: "... when it (the monkey) was as old as its mother was when she was 30 times as old as the monkey was when it was a fourth as old as it is now." Factor this out and you find you are discussing a time when the monkey "was" 7½ times as old as it is right now.

I know the Osborne 1 is a splendid little machine, but I doubt if it has quite that much power to reverse entropy.

Nor can this be a simple syntactical error (inadvertent use of "was" instead of "will be"); using the figures as given yields a negative weight, and therefore negative length, for the banana, and such a banana would be difficult for the monkey to get a firm grip on.

The problem only works if one assumes that, in the above-quoted excerpt, either the "30" is a "3" or "a fourth" is "a fortieth." Then the monkey's mother turns out to be 1½ times as old as her child, and matters proceed apace.

Provided, of course, a couple of other assumptions are made. In the second paragraph neither the units of length of the rope nor the units of age for either monkey or ma are specified. It's not unreasonable to infer feet as the measure of the rope's length and years as the measure of the ages, but don't you think a little more clarity might be in order?

You asked for methodology on the solution; it seems pretty obvious, but here it is:

First, from the paragraph on ages (as corrected), the monkey's mother's age (Y) is 1½ times the monkey's age(X) as follows: Y = ½*3*½*4*2*⅓*30*1/40*x. The prior paragraph specifies that x + Y = 30; ergo 2½*x = 30, or X = 12 and Y = 18.

Now, based on the final sentence of the second paragraph, (½*M) + B = ¼*(W + R), where:

M = weight of monkey (ounces)
W = weight of weight (ounces)
R = weight of rope (ounces)
B = weight of banana (ounces)

But M = W (first paragraph). R = ⅓*L(pounds), where L is the length of the rope; and L = X(second paragraph). Therefore, R = X/3(pounds), or R = (16*x/3(ounces). And M = Y = 1½*X(second paragraph).

Substituting, the equation simplifies to B = (19*X)/12 – 7½. Since X = 12, the weight of the banana works out to be 11½ ounces; since it weighs two ounces per inch, it's 5¾ inches long.

If you take it step by step, it's fairly easy to do all the above in your head; using any computer on it would be like killing mosquitos with a cannon.

Colin Barrett
Reston, VA

And as a matter of fact, the problem may be best solved by a computer, since it involves figuring out the starting point for your calculations. Therefore, in the spirit of heating up the competition and encouraging you to use your computers to solve the problem, we are adding a prize to the contest:

All of the correct answers we receive will go onto slips of paper to be inserted into a Osborne disk storage pocket, from which we will pull the name of one winner. The prize will be a copy of MuMath, a $350 software program that helps simplify and solve complex algebraic and mathematical problems.

So, get the monkey off your back and start calculating. —*th*

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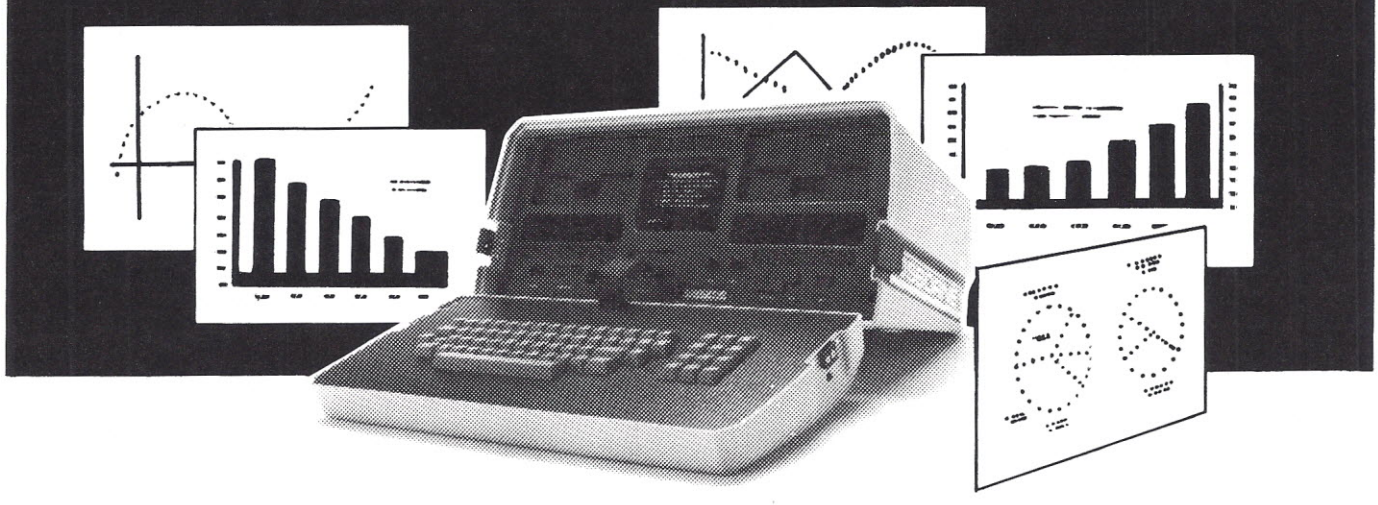

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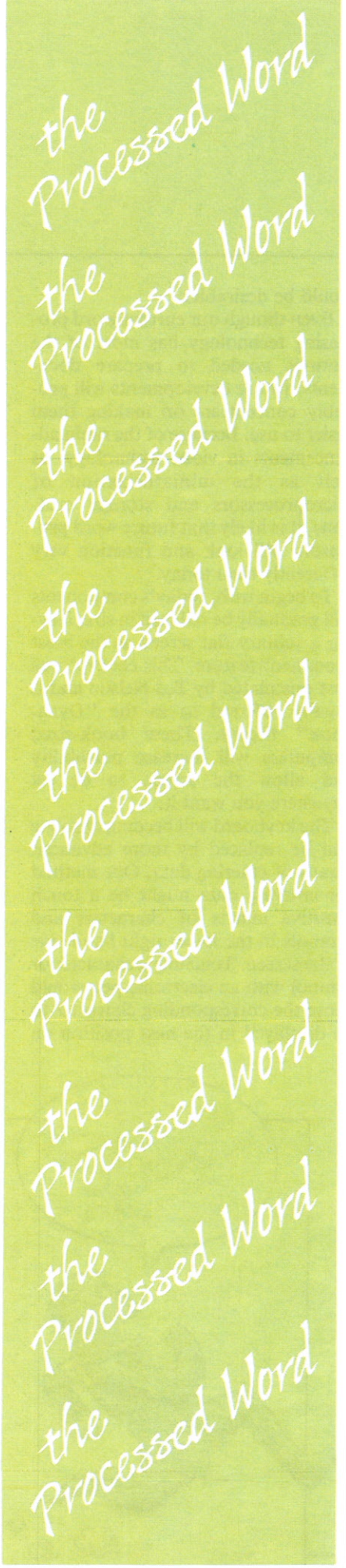


Word Precession And Succession

by Mike Iannamico

Writing begins with an idea, that gradually forms a thought, which evolves into a notion, then is recorded and molded to perfection; writing's purpose is to enlighten, and to serve as an origin for new ideas.

It is quite evident that word processing makes writing easier, less time consuming, and more accessible than ever before. However, there are some subtle influences exerted by this new technology that are not readily apparent. For instance, how will our society change now that anyone who has a mind to can write, edit, format, and inexpensively typeset their own manuscripts?

What about the very structure of our written language? Will the ease with which words can be rearranged foster more eloquent sentence structure? Interest in composition of the written word as an art form has steadily decreased over the last century. It's true that there's been a vast upswing in literacy; in fact, there has never been more written material. But, the bulk of writing these days, whether technical, scientific, journalistic, or fiction, concentrates more on subject matter than on using imaginative language.

Today's purveyors of fact and fiction are not necessarily interested in the poetic structure of their verse, but in the content. Maybe today's writers don't have the time to dwell on composition as did the great writers of the past. Modern day authors seem to be more interested in having their books made into movies, and who can blame them when everyone is into television and speed reading. Perhaps one of the by- products of word processing technology will be a renewed interest in prose as an art form, which may ultimately herald a new age for artistic writing.

Another interesting and entirely conceivable theory is that word processing will contribute to the evolution of human intelligence. You may think this a bold concept, but just as numbers are the key to unlocking the mysteries of time, space, and matter; so words are the building blocks upon which abstract thought is communicated. Let's examine this theory more closely by going back to the origin of language.

Our ancestors began communicating through noises and gestures that expressed their primal needs. Through repetitive use, these grunts soon took on standard meaning, and in effect became the first words. Can you imagine the 10,000th century B.C. "scholar" who began combining words together, and the intense contemplation these simple phrases evoked? It was, of course, this chaining together of words which led to

language. There is a direct correlation between the complexity of language and the advancement of civilization. This is probably due to the fact that while formulating a language, the consciousness of those using it is also being heightened.

Methods for recording the thought-provoking conversations taking place around the campfires of the world were adopted in the form of symbols and characters. The earliest writings known to exist were the Chinese Ideographs dated at 2,500 B.C., the Hieroglyphics from Egypt, and the Greek Alphabet. It is hard to conceive that there were no written languages before these, but maybe everything previously was recorded on disk! That may sound like a bad joke, but think about it!

Someday we will rely completely on the computer to communicate with each other, keep our records, plan our schedules, make all our calculations, and record our history. Unlike the ideographs and Heiroglyphics of our predecessors, what concrete evidence will we leave behind signifying our technological advancement? All that will remain is biodegradable magnetic tape and some glass chips and wires. Our unfortunate generations will have to start all over again in the garden of Silicon Valley.

The early writings not only provided a way to share and preserve ideas, but also became the foundation upon which more progressive ideas were born. Not long ago, the advent of the printing press helped disseminate information to a broader audience.

Now we have the word processor. Wait a minute! What happened to the typewriter? You might wonder "what's the difference", isn't the word processor just an improvement on the typewriter? True, both add convenience and save time, but word processing provides the advanced ability to manipulate your words and to examine the thoughts they convey through various perspectives. This ability to rearrange text provides such a unique source of feedback that the word processor actually becomes an extension of your reasoning and adds a new dimension to your thought process.

By rearranging the words on the screen, you are not only sparking novel ideas, but are able to examine your subject more closely. Ultimately you will express yourself more clearly. It is obvious that this new technology improves the dispersion of information by allowing text to be easily stored and transmitted. Less obvious is how it enhances the subjective capabilities of those using it, and the ultimate effect this and coming word processing developments will have on the intellectual growth of future generations.

Judging from the many letters we receive from writers and journalists, it is reasonable to assume that a fair percentage of Osborne 1 users have bought the computer for its word processing capabilities.

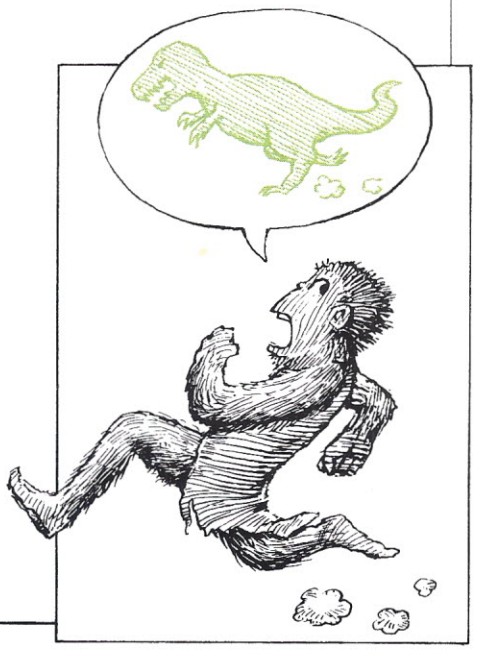
Most people pick a word processor to fit their particular needs, and once they get used to it, naturally don't want to switch. The only negative thing I hear about WordStar is that is has too many features and thus takes a while to learn. Such criticism is easily allayed considering the inferiority of other word processing packages, some of which don't offer file manipulations, printer controls, or even lowercase characters.

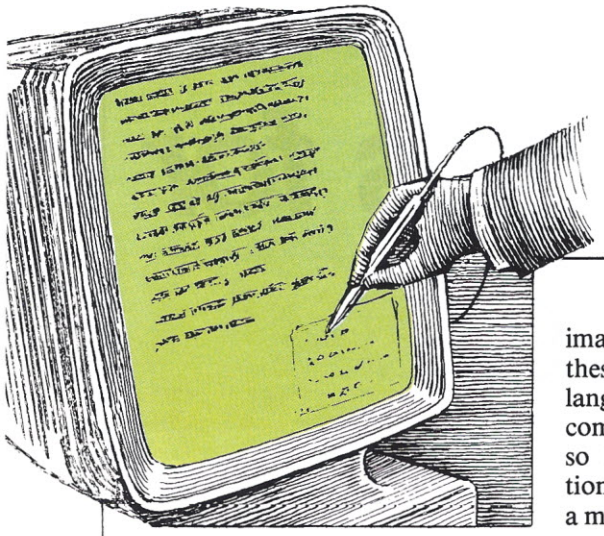
Recently a few programs have appeared that let you split the screen and view two files or two portions of the same file at once. This is definitely a nice feature for someone dealing with large documents or different files, and my guess is that the WordStar people are already working on this. Even stretching my imagination I can't think of many features that could be added to WordStar. Some provision for moving the cursor to a specific page number and compatibility with typesetting equipment would be desirable.

Even though our current word processing technology has most of the features needed to prepare documents, future developments will probably concentrate on making them easier to use. Because of the rapid advancements in video technology, as well as the miniaturization of microprocessors and storage mediums, it is likely that future word processors will look and function very differently than today.

To begin with, today's components will gradually be reduced in size, leaving a solitary flat screen as the most prominent feature. This concept was first postulated by Ted Nelson and is usually referred to as the "Dynabook" theory. These book-sized computers will increase portability and allow the screen to be set anywhere you want it.

The keyboard will become obsolete and be replaced by more advanced means of entering data. One method for entering data might be a touch sensitive matrix of characters and symbols in the lower right hand side of the screen. Touching a character or symbol with an electronic pen would cause the corresponding character to be displayed in the next position on





the screen. Then, you could go back and erase, insert, or perform other operations by touching the screen in a certain way. For example, you might go through and edit the text using standard proofreader marks, which would automatically be enforced. Spelling checkers and thesaurus-type functions would also be accessible with the touch of the screen. Undoubtedly, these computer screens will allow a host of other functions, like conventional graphic presentations, or possibly even full-length movies.

Voice recognition word processors have already been demonstrated, and considering all of the writers that dictate their books, this could be the direction we are headed. Since all computers speak the same language (binary data), some day these devices may be able to translate text into any language. It doesn't take an active imagination to see the potential of these translators to bust through the language barriers that have hampered communication between people for so long. Unfortunately, the variations in our spoken languages present a major technological hurdle that has not yet been crossed.

Like everything else, printers will get smaller. I would guess that the next generation of printers will probably have character fonts stored in memory that flash onto paper through a photographic or xerographic method. This printer technology is right around the corner; however, considering what a hassle it is pushing information-bearing paper around, I wouldn't be surprised if paper is used strictly for wiping up messes in the future.

If the media for storing data continues to shrink as it has, you can expect to have small, removable memory modules the size of a pencil eraser. These modules would plug into the computer and be used to store the information you generate. Alternatively, you would purchase memory modules containing your favorite book, magazine, or periodical, and plug them into your portable screen. Everyone could carry a single flat screen and have numerous documents contained in a pocket-sized carrying case. Students, for instance, would carry one screen and a rack of memory modules pertaining to each subject.

Well, so much for the annotated past, present, and future of word processing. I hope this deviation from the more conventional technical reporting has amused you. A technical writer needs some diversion, but you can expect future pieces to deal more with the mechanics of present-day word processing. Next issue I will be examining a new Osborne Approved Software package called Thesaurus.

Words are things; and a small drop of ink, falling like dew upon a thought, produces that which makes thousands, perhaps millions, think. Byron.

Mike Iannamico is a senior technical writer at Osborne Computer Corporation and is co-author of the User's Guide and the Technical Manual for the Osborne 1 computer.

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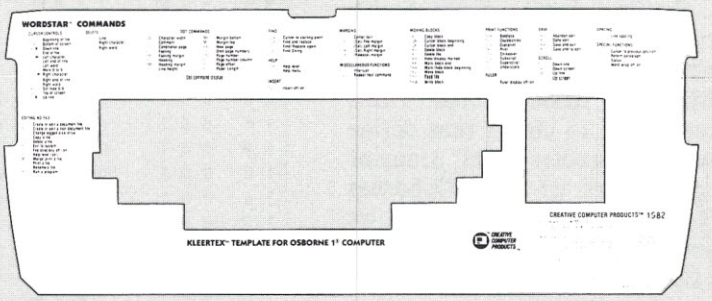

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The Missing Reference

In the last issue, Kelly Smith referred to Table 8-1 in the *Osborne User's Guide* and Appendix M in the Microsoft Basic manual. These references are to charts that define the ASCII character codes. Many of the purchasers of new Osbornes don't have this information, so we reprint the ASCII character codes here for their benefit.

Table 8-1 OSBORNE 1 ASCII Character codes in ascending order

Hexa Decimal	Binary	ASCII
0 0	0 0 0 0 0 0 0 0	NUL
0 1	0 0 0 0 0 0 0 1	SOH
0 2	0 0 0 0 0 0 1 0	STX
0 3	0 0 0 0 0 0 1 1	ETX
0 4	0 0 0 0 0 1 0 0	EOT
0 5	0 0 0 0 0 1 0 1	ENQ
0 6	0 0 0 0 0 1 1 0	ACU
0 7	0 0 0 0 0 1 1 1	BEL
0 8	0 0 0 0 1 0 0 0	ES
0 9	0 0 0 0 1 0 0 1	HT
0 A	0 0 0 0 1 0 1 0	LF
0 B	0 0 0 0 1 0 1 1	VT
0 C	0 0 0 0 1 1 0 0	FF
0 D	0 0 0 0 1 1 0 1	CR
0 E	0 0 0 0 1 1 1 0	SO
0 F	0 0 0 0 1 1 1 1	SI
1 0	0 0 0 1 0 0 0 0	DLE
1 1	0 0 0 1 0 0 0 1	DC1
1 2	0 0 0 1 0 0 1 0	DC2
1 3	0 0 0 1 0 0 1 1	DC3
1 4	0 0 0 1 0 1 0 0	DC4
1 5	0 0 0 1 0 1 0 1	AAk
1 6	0 0 0 1 0 1 1 0	SYU
1 7	0 0 0 1 0 1 1 1	ETB
1 8	0 0 0 1 1 0 0 0	CAN
1 9	0 0 0 1 1 0 0 1	EM
1 A	0 0 0 1 1 0 1 0	SUB
1 B	0 0 0 1 1 0 1 1	ESC
1 C	0 0 0 1 1 1 0 0	FS
1 D	0 0 0 1 1 1 0 1	GS
1 E	0 0 0 1 1 1 1 0	RS
1 F	0 0 0 1 1 1 1 1	VS

Hexa Decimal	Binary	ASCII
4 0	1 0 0 0 0 0 0 0	@
4 1	1 0 0 0 0 0 0 1	A
4 2	1 0 0 0 0 0 1 0	B
4 3	1 0 0 0 0 0 1 1	C
4 4	1 0 0 0 0 1 0 0	D
4 5	1 0 0 0 0 1 0 1	E
4 6	1 0 0 0 0 1 1 0	F
4 7	1 0 0 0 0 1 1 1	G
4 8	1 0 0 0 1 0 0 0	H
4 9	1 0 0 0 1 0 0 1	I
4 A	1 0 0 0 1 0 1 0	J
4 B	1 0 0 0 1 0 1 1	K
4 C	1 0 0 0 1 1 0 0	L
4 D	1 0 0 0 1 1 0 1	M
4 E	1 0 0 0 1 1 1 0	N
4 F	1 0 0 0 1 1 1 1	O
5 0	1 0 1 0 0 0 0 0	P
5 1	1 0 1 0 0 0 0 1	Q
5 2	1 0 1 0 0 0 1 0	R
5 3	1 0 1 0 0 0 1 1	S
5 4	1 0 1 0 0 1 0 0	T
5 5	1 0 1 0 0 1 0 1	U
5 6	1 0 1 0 0 1 1 0	V
5 7	1 0 1 0 0 1 1 1	W
5 8	1 0 1 0 1 0 0 0	X
5 9	1 0 1 0 1 0 0 1	Y
5 A	1 0 1 0 1 0 1 0	Z
5 B	1 0 1 0 1 0 1 1	[
5 C	1 0 1 0 1 1 0 0	\
5 D	1 0 1 0 1 1 0 1	]
5 E	1 0 1 0 1 1 1 0	^
5 F	1 0 1 0 1 1 1 1	—

Hexa Decimal	Binary	ASCII
0 0	0 0 0 0 0 0 0 0	@
0 1	0 0 0 0 0 0 0 1	^A
0 2	0 0 0 0 0 0 1 0	^B
0 3	0 0 0 0 0 0 1 1	^C
0 4	0 0 0 0 0 1 0 0	^D
0 5	0 0 0 0 0 1 0 1	^E
0 6	0 0 0 0 0 1 1 0	^F
0 7	0 0 0 0 0 1 1 1	^G
0 8	0 0 0 0 1 0 0 0	^H
0 9	0 0 0 0 1 0 0 1	^I
0 A	0 0 0 0 1 0 1 0	^J
0 B	0 0 0 0 1 0 1 1	^K
0 C	0 0 0 0 1 1 0 0	^L
0 D	0 0 0 0 1 1 0 1	^M
0 E	0 0 0 0 1 1 1 0	^N
0 F	0 0 0 0 1 1 1 1	^O
1 0	0 0 0 1 0 0 0 0	^P
1 1	0 0 0 1 0 0 0 1	^Q
1 2	0 0 0 1 0 0 1 0	^R
1 3	0 0 0 1 0 0 1 1	^S
1 4	0 0 0 1 0 1 0 0	^T
1 5	0 0 0 1 0 1 0 1	^U
1 6	0 0 0 1 0 1 1 0	^V
1 7	0 0 0 1 0 1 1 1	^W
1 8	0 0 0 1 1 0 0 0	^X
1 9	0 0 0 1 1 0 0 1	^Y
1 A	0 0 0 1 1 0 1 0	^Z
1 B	0 0 0 1 1 0 1 1	ESC
1 C	0 0 0 1 1 1 0 0	—
1 D	0 0 0 1 1 1 0 1	]
1 E	0 0 0 1 1 1 1 0	·
1 F	0 0 0 1 1 1 1 1	;

Hexa Decimal	Binary	ASCII
2 0	0 1 0 0 0 0 0 0	SP
2 1	0 1 0 0 0 0 0 1	!
2 2	0 1 0 0 0 0 1 0	"
2 3	0 1 0 0 0 0 1 1	#
2 4	0 1 0 0 0 1 0 0	$
2 5	0 1 0 0 0 1 0 1	%
2 6	0 1 0 0 0 1 1 0	&
2 7	0 1 0 0 0 1 1 1	'
2 8	0 1 0 0 1 0 0 0	(
2 9	0 1 0 0 1 0 0 1	)
2 A	0 1 0 0 1 0 1 0	*
2 B	0 1 0 0 1 0 1 1	+
2 C	0 1 0 0 1 1 0 0	,
2 D	0 1 0 0 1 1 0 1	—
2 E	0 1 0 0 1 1 1 0	.
2 F	0 1 0 0 1 1 1 1	/
3 0	0 1 0 0 0 0 0 0	0
3 1	0 1 0 0 0 0 0 1	1
3 2	0 1 0 0 0 0 1 0	2
3 3	0 1 0 0 0 0 1 1	3
3 4	0 1 0 0 0 1 0 0	4
3 5	0 1 0 0 0 1 0 1	5
3 6	0 1 0 0 0 1 1 0	6
3 7	0 1 0 0 0 1 1 1	7
3 8	0 1 0 0 1 0 0 0	8
3 9	0 1 0 0 1 0 0 1	9
3 A	0 1 0 0 1 0 1 0	:
3 B	0 1 0 0 1 0 1 1	;
3 C	0 1 0 0 1 1 0 0	<
3 D	0 1 0 0 1 1 0 1	=
3 E	0 1 0 0 1 1 1 0	>
3 F	0 1 0 0 1 1 1 1	?

Hexa Decimal	Binary	ASCII
6 0	1 1 0 0 0 0 0 0	
6 1	1 1 0 0 0 0 0 1	a
6 2	1 1 0 0 0 0 1 0	b
6 3	1 1 0 0 0 0 1 1	c
6 4	1 1 0 0 0 1 0 0	d
6 5	1 1 0 0 0 1 0 1	e
6 6	1 1 0 0 0 1 1 0	f
6 7	1 1 0 0 0 1 1 1	g
6 8	1 1 0 0 1 0 0 0	h
6 9	1 1 0 0 1 0 0 1	i
6 A	1 1 0 0 1 0 1 0	j
6 B	1 1 0 0 1 0 1 1	k
6 C	1 1 0 0 1 1 0 0	l
6 D	1 1 0 0 1 1 0 1	m
6 E	1 1 0 0 1 1 1 0	n
6 F	1 1 0 0 1 1 1 1	o
7 0	1 1 1 0 0 0 0 0	p
7 1	1 1 1 0 0 0 0 1	q
7 2	1 1 1 0 0 0 1 0	r
7 3	1 1 1 0 0 0 1 1	s
7 4	1 1 1 0 0 1 0 0	t
7 5	1 1 1 0 0 1 0 1	u
7 6	1 1 1 0 0 1 1 0	v
7 7	1 1 1 0 0 1 1 1	w
7 8	1 1 1 0 1 0 0 0	x
7 9	1 1 1 0 1 0 0 1	y
7 A	1 1 1 0 1 0 1 0	z
7 B	1 1 1 0 1 0 1 1	{
7 C	1 1 1 0 1 1 0 0	:
7 D	1 1 1 0 1 1 0 1	}
7 E	1 1 1 0 1 1 1 0	~
7 F	1 1 1 0 1 1 1 1	DEL

NOTE
Graphic characters must be accessed through an application program. ESC g enters graphic mode. The control key equivalent of each graphic character accesses and displays the graphic character.

M

ASCII Character Codes

ASCII Code	Character	ASCII Code	Character	ASCII Code	Character
000	NUL	043	+	086	V
001	SOH	044	,	087	W
002	STX	045	-	088	X
003	ETX	046	.	089	Y
004	EOT	047	/	090	Z
005	ENQ	048	0	091	[
006	ACK	049	1	092	\
007	BEL	050	2	093	]
008	BS	051	3	094	^
009	HT	052	4	095	<
010	LF	053	5	096	'
011	VT	054	6	097	a
012	FF	055	7	098	b
013	CR	056	8	099	c
014	SO	057	9	100	d
015	SI	058	:	101	e
016	DLE	059	;	102	f
017	DC1	060	<	103	g
018	DC2	061	=	104	h
019	DC3	062	>	105	i
020	DC4	063	?	106	j
021	NAK	064	@	107	k
022	SYN	065	A	108	l
023	ETB	066	B	109	m
024	CAN	067	C	110	n
025	EM	068	D	111	o
026	SUB	069	E	112	p
027	ESCAPE	070	F	113	q
028	FS	071	G	114	r
029	GS	072	H	115	s
030	RS	073	I	116	t
031	US	074	J	117	u
032	SPACE	075	K	118	v
033	!	076	L	119	w
034	"	077	M	120	x
035	#	078	N	121	y
036	$	079	O	122	z
037	%	080	P	123	{
038	&	081	Q	124	|
039	'	082	R	125	}
040	(	083	S	126	~
041	)	084	T	127	DEL
042	*	085	U		

ASCII codes are in decimal.
LF=Line Feed, FF=Form Feed, CR=Carriage Return, DEL=Rubout

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DYNACOMP'S previous BRIDGE 2.0 customers may upgrade to BRIDGE MASTER for a nominal charge of $5.00 plus postage and handling (see ordering information box).

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TEACHERS' AIDE consists of three basic modules contained in one program. The first module provides addition and subtraction exercises of varying levels of difficulty. The second module consists of multiplication problems in which the student may be tested both on the final answer and/or on the subtotal answers in the long hand procedure. Several levels of complexity are provided here as well. The third module consists of division problems; one particularly nice feature of the division module is that the long hand division steps can be displayed along with the remainder in order to clearly demonstrate the procedure by which the remainder is derived. Using TEACHER'S AIDE is not merely a drill, but rather a learning experience.

STATISTICS and ENGINEERING

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DIGITAL FILTER is a comprehensive data processing program which permits the user to design his own filter function or choose from a menu of filter forms. In the explicit design mode the shape of the frequency transfer function is specified by directly entering points along the desired filter curve. In the menu mode, ideal low pass, high pass and band pass filters may be approximated to varying degrees according to the number of points used in the calculation. These filters may optionally also be smoothed with a Hanning function. In addition, multi-stage Butterworth filters may be selected. Features of DIGITAL FILTER include plotting of the data before and after filtering, as well as display of the chosen filter functions. Also included are convenient data storage, retrieval and editing procedures.

DATA SMOOTHER — **$23.95 Diskette**

This special data smoothing program may be used to rapidly derive useful information from noisy business and engineering data which are equally spaced. The software features choice in degree and range of fit, as well as smoothed first and second derivative calculation. Also included is automatic plotting of the input data and smoothed results.

FOURIER ANALYZER — **$23.95 Diskette**

Use this program to examine the frequency spectra of limited duration signals. The program features automatic scaling and plotting of the input data and results. Practical applications include the analysis of complicated patterns in such fields as electronics, communications and business.

TFA (Transfer Function Analyzer) — **$23.95 Diskette**

This is a special software package which may be used to evaluate the transfer functions of systems such as hi-fi amplifiers and filters by examining their response to pulsed inputs. TFA is a major modification of FOURIER ANALYZER and contains an engineering-oriented decibel versus log-frequency plot as well as data editing features. Whereas FOURIER ANALYZER is designed for educational and scientific use, TFA is a engineering tool. Available for all computers.

HARMONIC ANALYZER — **$28.95 Diskette**

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FOURIER ANALYZER, TFA and HARMONIC ANALYZER may be purchased together for a combined price of $51.95 (three cassettes) and $63.95 (three diskettes).

REGRESSION I — **$23.95 Diskette**

REGRESSION I is a unique and exceptionally versatile one-dimensional least squares "polynomial" curve fitting program. Features include very high accuracy; an automatic degree determination option; an extensive internal library of fitting functions; data editing; automatic data, curve and residual plotting; a statistical analysis (eg: standard deviation, correlation coefficient, etc.) and much more. In addition, new fits may be tried without reentering the data. REGRESSION I is certainly the cornerstone program in any data analysis software library.

REGRESSION II — **$23.95 Diskette**

PARAFIT is designed to handle those cases in which the parameters are imbedded (possibly nonlinearly) in the fitting function. The user simply inserts the functional form, including the parameters (A(1), A(2), etc.) as one or more BASIC statement lines. Data, results and residuals may be manipulated and plotted as with REGRESSION I. Use REGRESSION I for polynomial fitting, and PARAFIT for those complicated functions.

MULTILINEAR REGRESSION (MLR) — **$28.95 Diskette**

MLR is a professional software package for analyzing data sets containing two or more linearly independent variables. Besides performing the basic regression calculation, this program also provides easy to use data entry, storage, retrieval and editing functions. In addition, the user may interrogate the solution by supplying values for the independent variables. The number of variables and data size is limited only by the available memory.

REGRESSION I, II and MULTILINEAR REGRESSION may be purchased together for $51.95 (three cassettes) or $63.95 (three diskettes).

ANOVA — **$43.95 Diskette**

In the past the ANOVA (analysis of variance) procedure has been limited to the large mainframe computers. Now DYNACOMP has brought the power of this method to small systems. For those conversant with ANOVA, the DYNACOMP software package includes the 1-way, 2-way and N-way procedures. Also provided are the Yates 2^{K-P} factorial designs. For those unfamiliar with ANOVA, do not worry. The accompanying documentation was written in a tutorial fashion (by a professor in the subject) and serves as an excellent introduction to the subject. Accompanying ANOVA is a support program for building the data base. Included are several convenient features including data editing, deleting and appending.

BASIC SCIENTIFIC SUBROUTINES, Volumes 1 and 2

DYNACOMP is the exclusive distributor for the software keyed to the popular texts ***BASIC SCIENTIFIC SUBROUTINES, Volumes 1 and 2*** by F. Ruckdeschel (see advertisements in BYTE magazine). These subroutines have been assembled according to chapter. Included with each collection is a menu program which selects and demonstrates each subroutine.

Volume 1

Collection #1: Chapters 2 and 3—Data and function plotting; complex variables and functions.
Collection #2: Chapter 4—Extended matrix and vector operations.
Collection #3: Chapters 5 and 6—Random number generators (Poisson, Gaussian, etc.); series approximations.
Price per collection: $20.95 Diskette
All three collections are available for $53.95 (three diskettes).

Volume 2

Collection #1: Chapter 1—Linear, polynomial, multidimensional, parametric least squares.
Collection #2: Chapter 2—Series approximation techniques (economization, inversion, reversion, shifting, etc.).
Collection #3: Chapter 3—Functional approximations by iteration and recursion.
Collection #4: Chapter 4—CORDIC approximations to trigonometric, hyperbolic, exponential and logarithmic functions.
Collection #5: Chapter 5—Table interpolation, differentiation and integration (Newton, LaGrange, splines).
Collection #6: Chapter 6—Methods for finding the real roots of functions.
Collection #7: Chapter 7—Methods for finding the complex roots of functions.
Collection #8: Chapter 8—Optimization by steepest descent.
Price per collection: $18.95 Diskette
All eight collections are available for $129.95 (eight diskettes).

Because the texts are a vital part of the documentation, ***BASIC SCIENTIFIC SUBROUTINES, Volumes 1 and 2*** are available from DYNACOMP.

BASIC SCIENTIFIC SUBROUTINES, Vol. 1 (319 pages): $19.95 + 75¢ postage
BASIC SCIENTIFIC SUBROUTINES, Vol. 2 (790 pages): $23.95 + $1.50 postage

See reviews in KILOBAUD and Dr. Dobbs.

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new Products

Fee, Fie, Foe, Ficomp

A set of 11 machine-language utility programs for the Osborne 1 computer is now available from Ficomp, Inc. Price is $24.95 for a single density diskette ready for use on an Osborne computer.

The utilities include VERSION, which provides the capability to apend and track a version number to any file. The version number is attached to the file name, but is totally transparent to the user, unless otherwise desired. No additional diskette space is used to keep track of the version number, nor is the file modified in any way. Also included are DIRO, an extended directory system; VCOPY, a verification copy program; FCOPY, a fast copy program; UCOPY, a PIP-like utility that copies information between user numbers; CMPAR, a comparison utility that spots differences between files; MLIST, a paginated-listing system for printing ASCII text files; VIEW, a utility similar to MLIST, but designed for the Osborne 52-character screen; TITLE, a program that provides a full-page banner title; and FMENU, a program that allows users to generate a menu from all .COM-type files on a diskette.

Ficomp, Inc.
3017 Talking Rock Drive
Fairfax, VA 22031
703-280-1394

Accounting on the Osborne 1

A Financial Statement Manager program is now being offered to Osborne 1 owners from RSN Enterprises. An enhanced version of the popular Osborne/McGraw-Hill General Ledger, the Financial Statement Manager handles up to 100 ledger accounts with up to 650 transactions stored on a single density diskette before posting.

Most of the features of the original General Ledger program have been retained, including the trial balance and trial income statement generation capability, cash journal with descriptive audit trail, and transaction detail printing. All balances can be shown for the current month, quarter, or year-to-date.

The program retails for $99 and features a menu-driven entry procedure, suitable for computer novices.

RSN Enterprises
316½ Parkwood Drive
Grand Junction, CO 81503
303-245-7583

Put Your Osborne on a Leash

If static is giving you problems, J. Gaudio Company has a product for you: the Static Leash. One end of this simple product plugs into the MODEM or BATT connector on the front of the Osborne 1, the other end wraps around your wrist. The leash keeps harmful static discharges from entering your computer and possibly destroying an electronic component.

The Static Leash sells for $24.50.

J. Gaudio Company
PO Box 27826
Denver, CO 80227
303-762-0594

Go Fast, Get Smart

A new direct connect modem is available from Hayes Microcomputer Products. The unit, dubbed the Smartmodem 1200, is similar to the earlier Smartmodem, but features 1200-baud, Bell 212A transmission. In addition, the unit can communicate with a standard Bell 103, 300-baud data source.

new Products

Designed as part of the Hayes Stack series of products, the Smartmodem 1200 features auto-answer, auto-dial operation and is only 1.5 by 5.5 by 9.6 inches in size.

Hayes Microcomputer Products
5835 Peachtree Corners East
Norcross, GA 30092

Software Tools For the Osborne

A number of new software tools and programs for the Osborne 1 are now available from The Software Toolworks.

C/80 is a C compiler that includes full C structures, pointers and arrays, all storage classes, and data initialization. C/80 comes with an 8080 assembler, but also compiles code suitable for use with Microsoft's M80 assembler. $49.95.

RATFOR adds structured programming to Microsoft FORTRAN, including free-format source statements, multiple-statement IFs, IF-THEN-ELSE, and structured WHILE and FOR loops. RATFOR requires Microsoft FORTRAN for operation. $39.95.

SPELL is a spelling checking program with a compact 50,000 word dictionary stored in less than 31K bytes of disk space. About 4,000 words are proofed per minute on the Osborne system. $49.95.

LISP, a language designed primarily for artificial intelligence research, features a simple editor, a file librarian, and a formatted expression print routine, all written in LISP. Two artificial intelligence demonstration programs are also included. $39.95.

CRYPT uses a Huffman coding technique to compress files, saving 25 to 50 percent in text and program storage space. A user-provided password protects files against unauthorized readers. $24.95.

Several games are also available from The Software Toolworks for the Osborne 1. The original Adventure game lists for $19.95 and plunges you into the magic realm of Colossal Cave. ELIZA carries on a conversation with you, as if it were a psychiatrist ($24.95). MUNCHKIN is an arcade-style game that has you running through a maze avoiding

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Forth (Z-80 Version)	SuperSoft	$149/30
Fortran W/Ratfor	SuperSoft	$300/35
*'C' Compiler	SuperSoft	$200/20.00
*LISP	SuperSoft	Call
*ADA	SuperSoft	$250/NA
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creatures that are trying to gobble you up ($19.95). MYCHESS plays chess from an opening book of over 850 moves and was the winner of the 1980 West Coast Computer Faire Chess Championship; $34.95.

The Software Toolworks
14478 Glorietta Drive
Sherman Oaks, CA 91423
(213) 986-4885

Mean, Lean, and Green

Leading Edge Products has introduced a new 12-inch video display monitor they call "Mean Green." The 13-pound, green screen CRT is suitable for displaying 24 lines of 80 columns and retails for only $99.

Included in the price is a one-year, no-questions-asked, return-and-replacement plan should the unit fail.

Leading Edge Products
225 Turnpike Street
Canton, MA 02021
1-800-343-6833

Author's Note:

A new microcomputer software package designed by a writer for other writers is now available for the Osborne 1. WRITE TRACK is touted as an easy-to-use yet comprehensive manuscript tracking system that enables writers to maintain accurate and up-to-the-minute information about their manuscripts (e.g., queries, submissions, rejections, sales, etc.) and the market at large. In addition,WRITE TRACK proves useful at tax time because it includes expense notes for individual manuscripts.

WRITE TRACK retails for $100.
Gradan Consulting Company
PO Box 3594
Thousand Oaks, CA 91359

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If you've been looking for some method of printing out technical manuscripts that require special characters such as the greek alphabet or mathematical symbols, Techware's Chartech might be of interest.

Designed to be used with WordStar, Chartech allows you to enter and print such symbols as sigma, the square root sign, subscripts, superscripts, formulas—up to 94 special characters. You can define your own characters if the ones with Chartech are not satisfactory.

Chartech requires an Epson printer with Graftrax. Price is $50.

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Letters

Continued from page 7

puters and, at least for now, don't know enough to do anything other than follow the simplest instructions *exactly* as written.

That's what I did with Jim Woolley's "WordStar with Epson" article and each time it almost worked. Everything except getting out of WALLBANGER mode.

When I tried to get out of it with Woolley's patches, I couldn't—and an "F" appeared at the far left of my page as an added fillip.

It is possible I miskeyed the patches twice, but it is also possible the instructions were wrong, or some nuance, obvious to a more experienced user, was left out of Woolley's instructions.

Last, I'd like you and the authors of the FOG section to know, despite my critical comments, learning how to automatically toggle OFF OJ and set help at level 2 are two thngs I've been trying to figure out how to do for months and I thank all of you for showing me how.

William Read Woodfield
Los Angeles, CA

Jim Woolley sent in the following corrections to his article:

Unfortunately, my article "WordStar with Epson" was incorrectly transcribed from its original publication in the March 1982 issue of FOGHORN, Attached are the corrections.

Although the patches appearing in the magazine will not work as intended, the result is not disastrous. Y turns ON emphasized-double mode, but the next Y sends a verticle tab followed by an F. It then turns OFF double-print but leaves emphasized mode active. Presumably the operator would quickly realize that Y was not operating properly and would instead use Q D to turn emphasized-double mode ON, with W D turning it OFF.

The second major error on page 24 results in incorrect information sent by WordStar to turn off all special features upon conclusion of print activity. This will probably have no impact in most cases. At worst, the operator might wish to reset the printer by switching it OFF and then ON again.

Here are the corrections. On page 24 change:

RIBOFF: + 0B to
ROBOFF: + 1 = 1B

PSINIT: + 11 = 03 to
PSINIT: + 11 = 0B

—jw

PRAISE BE

Your first issue is a success! The first computer publication that I can understand. Please don't change it.

Mike Nataluk
no address given

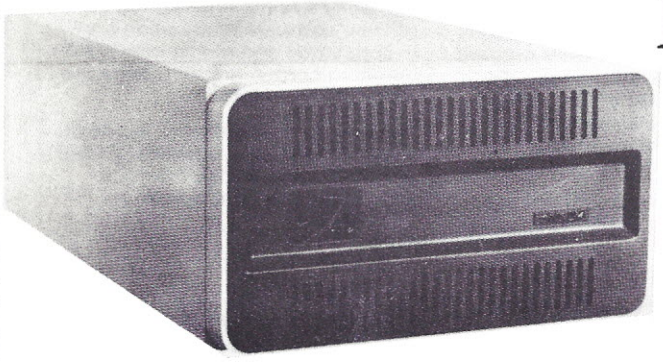
I'm disappointed that I didn't learn of *The Portable Companion* sooner. Enclosed is my subscription. If at all possible, please send a premiere issue.

Jim Johnston
Dallas, TX

I just received the premier issue of *The Portable Companion* and was quite impressed. This magazine promises to be an indispensible aid to all Osborne 1 owners. Unfortunately, there was no information on CBASIC. I hope you will include some articles on this subject in future issues (perhaps even a regular column?).

Here's a helpful hint concerning the SFK's article in the user's group column: I have found that you can

HELIX WINCHESTERS For the OSBORNE



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Auto Boot on the Drive

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establish a control-Z using the SETUP program and this gives you a HOME key that functions properly under CP/M. Just press the 'CTRL' key and the Z key once you have selected the key you wish to establish as a HOME key. I also found it useful to establish an 'XDIR' key and an 'SDIR B:' key. On my MBASIC diskette I established a 'LIST,' 'SYSTEM,' 'AUTO 5,5' and 'PRINT CHR$(26)' keys. It helps if you use the same keys for similar functions (e.g. the CP/M HOME Key and the MBASIC PRINT CHR$(26) key are both on key #1).

I found some problems with graphics controls as shown in the "BASIC Graphics" article and was wondering if other readers had the same problems. The 'HO$' is said to be CHR$(27) + CHR$(1). This does not work on my machine, a plain CHR$(30) homes the cursor without clearing the screen. Also, UY$ (start underlining) is shown to be CHR$(27) + "1"(one) whereas it should be a small L in quotes (I noticed it had the same value in the HELP program; is there a problem on my Osborne?).

Despite these minor problems I found this to be an excellent and informative magazine and wish to be a regular subscriber. Here's to a successful future.

Douglas Haire
San Diego, CA

Things Don't Line Up

I am happy to see the premier issue of the magazine, and enclose my check for an initial subscription. I also have a couple of questions for you.

1) My Osborne 1 is connected to a Diablo 630 printer intended to give me camera-ready copy for textbooks that I write. I have frequent reason to use the subscript and superscript features, but encounter a difficulty. After the subscript is printed, the printer does not uniformly return to the same level that it was prior to the subscript, but may be slightly lower or slightly higher. I have not found this trouble with the superscripts. I enclose a page showing these two effects. Is this a software problem, or is it a problem with the printer? I asked a Xerox repairman about it, and he suggested loose gears in the tractor, but I find these to be free of slippage.

2) I have a diskette with DataStar software as formatted for the Heath/Zenith 89 (this was obtained legally from a Zenith sales outlet). Is there any way in which I can transfer this to the Osborne format?

Galen Ewing
Las Vegas, NV

Your Xerox repairman was close, but not quite correct. Normally, Diablo recommends that the friction feed mechanism be disabled when using tractor feeds. What happens when paper is pushed down around the platen (as in subscripting) is that it doesn't always go around it easily, resulting in uneven lines during printouts. You might try, therefore, to use the friction feed in addition to the tractor feed. If this doesn't work, the only solution is a bidirectional tractor (one with tractor mechanisms on each side of the platen). Paper is held between tractors and when you move the paper any direction, both tractors are involved in the move. If you are having lining up problems and already have a bidirectional tractor feed, then it is adjusted improperly; make sure that the paper is tight (but not stretched) between the tractors.

Your second question is a tough one. Physically, it is very simple to set a Heath/Zenith 89 and an Osborne 1 side by side and transfer files between them. Legally, the license agreement you signed when you purchased DataStar specifically prohibits you from doing so. I wish I could be of more help in this area, but I think that MicroPro (the creators of DataStar) is the only one that can tell you that such a transfer is okay to do. —th

Documentation Frustrations

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Letters

First, I feel that it is necessary to say that a formerly confirmed user of the TRS-80 Model I has switched to being convinced of the advantages of your "inevitable" machine.

With anyone who is economy minded, it is nice to know that even without discounts the Osborne 1 is a very good purchase. The idea of "building in" the necessary components to make a truly portable (not just transportable!) microcomputer is one that is long overdue. I have attended meetings in which I have demonstrated my gem for the evening while others are still shuttling back and forth with pieces of equipment and extension cords to show a program on their machine that has left them sweating. I could mention numerous cases, but it would only begin to sound as if I'm gloating.

However, all is not perfect. You present the Osborne 1 as a machine for those who want it to run right away. I feel that this is a little misleading and your documentation has some errors that could leave the beginner frustrated.

The IEEE-488 port was not a straightforward exercise to configure as a Centronics parallel port. The User's Guide Addendum suggested that the edge-card is a 36-pin connector while my 737 has a 40-pin connector. The correct connections are:

Osborne	Centronics
1	3
3	5
5	7
7	9
11	1
15	21
17	27
19	25
2	11
4	13
6	15
8	17
12	37
16	16
18	24

It wouldn't have been so bad if the dealer knew of this, but selling and installing are his strong points, not corrections.

I'm sure that it has been caught by now, but on page 4 of the addendum the correct code for starting the underline is "ESC l" (lowercase L). I still haven't figured out how to use the cursor positioning code and it would be helpful if you could forward a small BASIC programming example of how to use it.

I realize that you have spent a great deal of time reading my letter and I appreciate any follow-up that you could provide for me on the above points.

R.M. Crawford
Cavan, Ontariou, CANADA

We set Mr. Crawford the information he requested in mid-May, but the points he raises are ones that deserve some comment from Osborne. The Centronics connections mentioned in the manual are for the standard Centronics connector, not the 40-pin edge connector on the 730, 737, and 739 models. We do make changes to our manual from time to time, and we'll try to keep you updated about these changes through this magazine. -th

Osborne Interest Groups

My son and I would be most interested in learning more about the Osborne interest groups throughout the nation and how to get in touch with them.

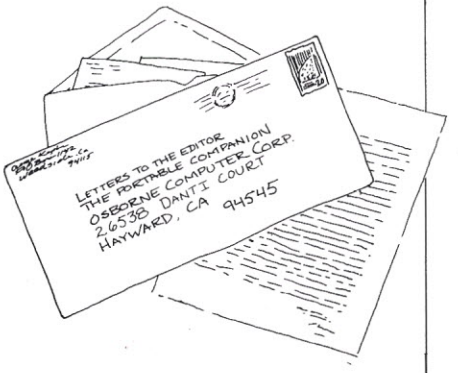
He is on the faculty of San Diego State University and teaches programming. He is also a member of the Osborne interest group in San Diego.

I am a recent purchaser of an Osborne computer and would likewise be interested in interest groups in the Los Angeles area.

We would like to get in touch with you and other interest groups and would appreciate any information you may be able to furnish.

We can be reached at
Alan C. Simpson
c/o Microventures, Co.
5328 Bragg Street
San Diego, CA 92122

Alan W. Simpson
Santa Ana, CA



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Puzzler

This is a problem for those of you who have electronic spreadsheets in your mind, as well as in your Osborne computer. Have one of your friends select a number, any number, no matter how many digits. Have them write it down on a sheet of paper. Tell your friend to multiply the original number by five, then add five to the product and multiply that number by two. Finally, add two to it, and have your numeric comrade tell you the final figure they calculated.

In just a moment, you'll be able to tell your friend the number they started with.

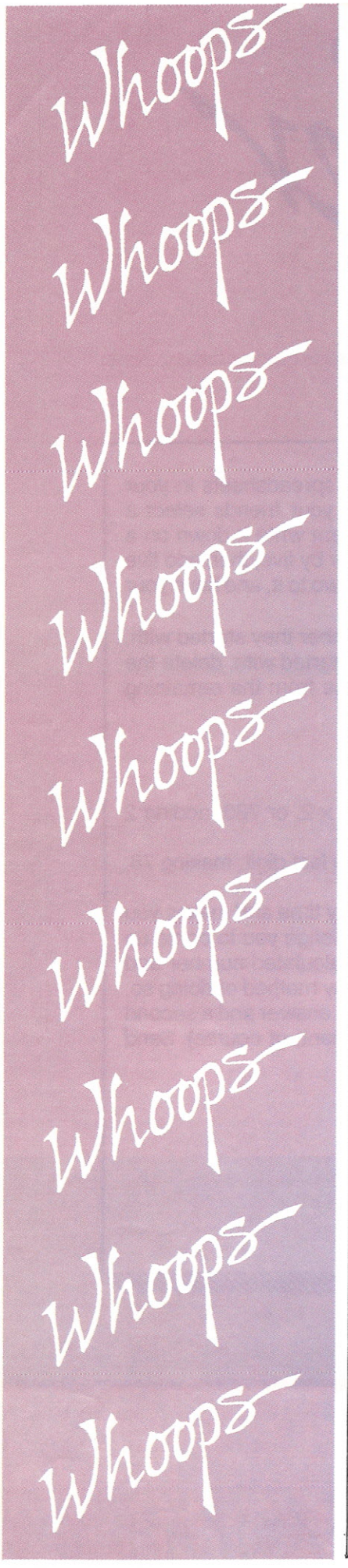
How do you do it? To determine the number your friend started with, delete the last digit from the final sum given to you. Then subtract one from the remaining number. Here's an example:

1. Your friend selects the number 77, and writes it down.
2. Your friend multiplies that number by five and adds five.
   That's 77 × 5, or 385: adding 5 makes it 390.
3. Next, your friend multiplies by 2 and adds 2. That's 390 × 2, or 780; adding 2 makes it 782.
4. Your friend announces their result as 782. You delete the last digit, making 78, then subtract 1 to get 77, their original number.

The question here is can you figure out why this works every time and makes you look so smart? Once you've figured out the secret, we challenge you to come up with a SuperCalc worksheet that allows you to enter the calculated number and then displays the correct beginning number. There is an easy method of doing so. We'll award a free one year's subscription to the first correct answer and a second one to the most elegant answer we receive (in our judgement, of course). Send your answers to:

Jim Tunnell
Puzzler Thinkerupper
Osborne Computer Corporation
26538 Danti Court
Hayward, CA 94545

See page 76 for more Puzzler



Righting the Wrongs

As with any new venture, a few unwanted "features" crept into the first issue of *The Portable Companion*. Obviously, our intent in publishing the magazine is not to confuse or muddy up the information it presents. In the interest of clarity and precision, here are some of the idiosyncracies that made it into the last issue:

The Missing Leash

The Wizard of Osborne column in the last issue made reference to a new product, The Static Leash, and asked readers to look for information about it in the New Products section. Well, if you looked, you didn't find it. You *will* find it in this issue's New Products section, however.

Double Density

At the time we went to press with the last issue we checked our description of Double Density that appeared in the New Products section with Adam Osborne and others apprised of the release schedule for the project. At that time (early June), double density was scheduled for release the following Friday, so it was decided to leave the line "double density is now being shipped to dealers" in the product description. Our final release quality check the following week indicated that we were getting more rejected double density boards than our tough quality control standards allow.

The nature of the problem is a simple one. Between five and ten percent of the manufactured boards fell outside of the margins that would allow them to operate with your single density Osborne 1. Our stated goal is to get *all* failures under warranty to less than one percent of the product we produce, which would place us at the forefront of the industry in terms of quality control. Already our computers are experiencing three-month reliability of over 95%, better than the reports we've seen on the IBM Personal Computer—introduced only slightly after the Osborne 1—and slightly lower than that of the current industry leader, Apple.

Our choice, therefore, was to hold off double density shipments until we could bring the product up to OCC's reliability standards. To make sure we didn't overlook something, we brought in experts from several independent consultants as well as the two companies that manufacture disk drives for us. The results of this inten-

sive reexamination of our double density option and how it is manufactured have led us to a slightly different, and much better, hardware design.

The good news is that double density is back into the manufacturing process and should be out within 45 days of the time you read this. The price is still the same; the software is still the same; double density still reads and writes other diskette formats; and we even have a software surprise for you that should partly compensate for the wait.

The Wizard Backs Down

In a question about the IEEE-488 interface, the Wizard of Osborne mentioned that Osborne literature does not claim that the IEEE-488 interface is fully implemented as per the HP standard. Well, the Wizard was wrong (he didn't do too well in the movie, either). Some of the earliest Osborne literature did incorrectly claim that the IEEE-488 port was "fully implemented." The HP specifications are quite detailed, and Osborne has not yet completely ascertained the differences, if any, between the Osborne implementation and HP's design.

Rocky Road to Smoother Scrolling

My article on smoother scrolling for WordStar seems to have brought in a lot of calls; I know, I've had to answer most of them.

Three errors crept into the program listing, two of which appear as errors to the assembler, one of which is a hidden "gotcha." Change the program as follows:

ESCAPE DB 27 becomes
ESCAPE EQU 27

CLEAD1 DB 2, ESCAPE,"=" becomes CLEAD1 DB 2, ESCAPE, '='

MEMADR DB SCREEN becomes MEMADR DB 00,0F0h

In addition, three other problems have appeared, although I won't take credit for them.

First, many of you apparently are confusing the letter O(oh) with the number 0(zero). All zeroes in the program listing are typed with slashes through them, so pay close attention when you're typing in the program.

Second, step five requires that your CP/M Utility diskette be in drive A and your WordStar diskette be in drive B. Somehow, many of you invented another instruction that required you to take the CP/M Utility diskette out of drive A.

Last, a little-known glitch in WordStar's non-document mode has caught several of you by surprise. When you edit a document in the "N" (non-document) mode, if the cursor is left in any position other than the end of the file, the high-order bit of the character the cursor is at is apparently set by WordStar. ASM doesn't like high-order bits. In fact, ASM reacts so violently to high-order bits that it wanders off into the ether, never to return. To make sure this doesn't happen, always use QC before saving a file to be assembled.

There, that should smooth things over. Now if I could only have been faster in getting these corrections in... —th

The Missing CalcAid

In the last CalcAids column the initial sentence indicates that Osborne introduced the first CalcAid product in May, 1982. Close, but no cigar. We did announce the concept of CalcAids in May, as suggested, but the Expense Report CalcAid in the last issue of *The Portable Companion* was the first published CalcAid. The first CalcAid product to be released by the Osborne Approved Software program is Real Estate Property Management, and was released earlier this month.

We should also clarify the difference between CalcAids that appear in *The Portable Companion* and those that are released through the Osborne Approved Software program. CalcAids that appear in these pages are simple, starter spreadsheets. They are meant to provide a skeleton upon which you can build a more complete and customized program. The CalcAids that are published by the Approved Software group are intricate, finished, interlocking spreadsheets, and are designed to completely perform tasks in what is often called "vertical markets" (a subset of the entire marketplace, usually associated with one field or discipline).

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Sources

Each issue we present the names and address of companies whose products relate to one of our feature articles. This issue we're listing the names and addresses of companies that deal with data communications equipment, software, or services.

Manufacturers of Modems

Anderson Jacobsen
521 Charcot Avenue
San Jose, CA 95131
(408) 263-8520

General DataComm Industries
One Kennedy Avenue
Danbury, CT 06810
(203) 797-0711

Prentice Corporation
266 Caspian Drive
Sunnyvale, CA 94086
(409) 734-9810

ESI LYNX
123 Locust Street
Lancaster, PA 17602
(717) 291-1116

Hayes Microcomputer Products
5853 Peachtree Corners East
Norcross, GA 30092
(404) 449-8791

VEN-TEL
2342 Walsh Avenue
Santa Clara, CA 95051
(408) 727-5721

Communications Software

ASCOM
Westico, Inc.
25 Van Zant Street
Norwalk, CT 06855
(203) 853-6880

COMMX, CONSOLX
Hawkeye Grafix
23914 Mobile Street
Canoga Park, CA 91307
(213) 348-7909

CROSSTALK
Microstuf, Inc.
1900 Leland Drive, Suite 12
Marietta, GA 30067
(404) 952-0267

Data Communications Services

Dow Jones News/Retrieval
Dow Jones & Company
PO Box 300
Princeton, NJ 08540
(800) 257-5114

Source
The Source
1616 Anderson Road
McLean, VA 22102
(800) 336-3366

Two useful, free, bulletin board services you might want to note are as follows:
OXGATE (408) 263-2588 (Osborne specialty)
CP/M-NET (805) 527-9321 (CP/M speciality)
These two bulletin boards have much public domain software available and list numbers of other, free bulletin boards throughout the nation.

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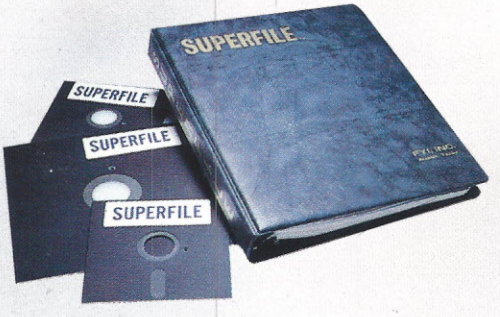

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JMM Computer Peripheral Accessories for Osborne™...

These RS232C Serial Cables are especially designed to interface the Osborne computer system to the various serial devices used in the computer industry.

A coaxial type video cable is required for the high data rates transmitted by the Osborne. This quality cable enhances the display.

The EXMON external monitor adapter is designed for the Osborne computer system, and enables the use of any standard video monitor with the Osborne 1 computer.

The EXMON II is a combination package and includes the EXMON and a UHF modulator. This allows the use of television sets as monitors without "hard wire" connections to the television set.

The Centronics printer cable allows the use of the IEEE-488 port as a centronics conformal interface for printers. This cable is 5' long and avoids the need for a serial to parallel interface in the printer.

The KEYBOARD EXTENDER cable is intended to increase the freedom of movement for the keyboard of the Osborne 1. This cable plugs into the Osborne 1's keyboard connector and then the keyboard cable plugs into the other end. The standard length is 24".

The IEEE-488 adaptor cable provides the standard IEEE-488 interface connection to the Osborne 1 computer.

JMM Enterprises manufactures and distributes quality interface products for the Osborne. We provide Monitors, Printers, and STROBE™ Plotters. An EXMON adapter is also available for your HP-85.

These products are in stock at local dealers. You may contact JMM directly for assistance. Overseas shipments are no problem.

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